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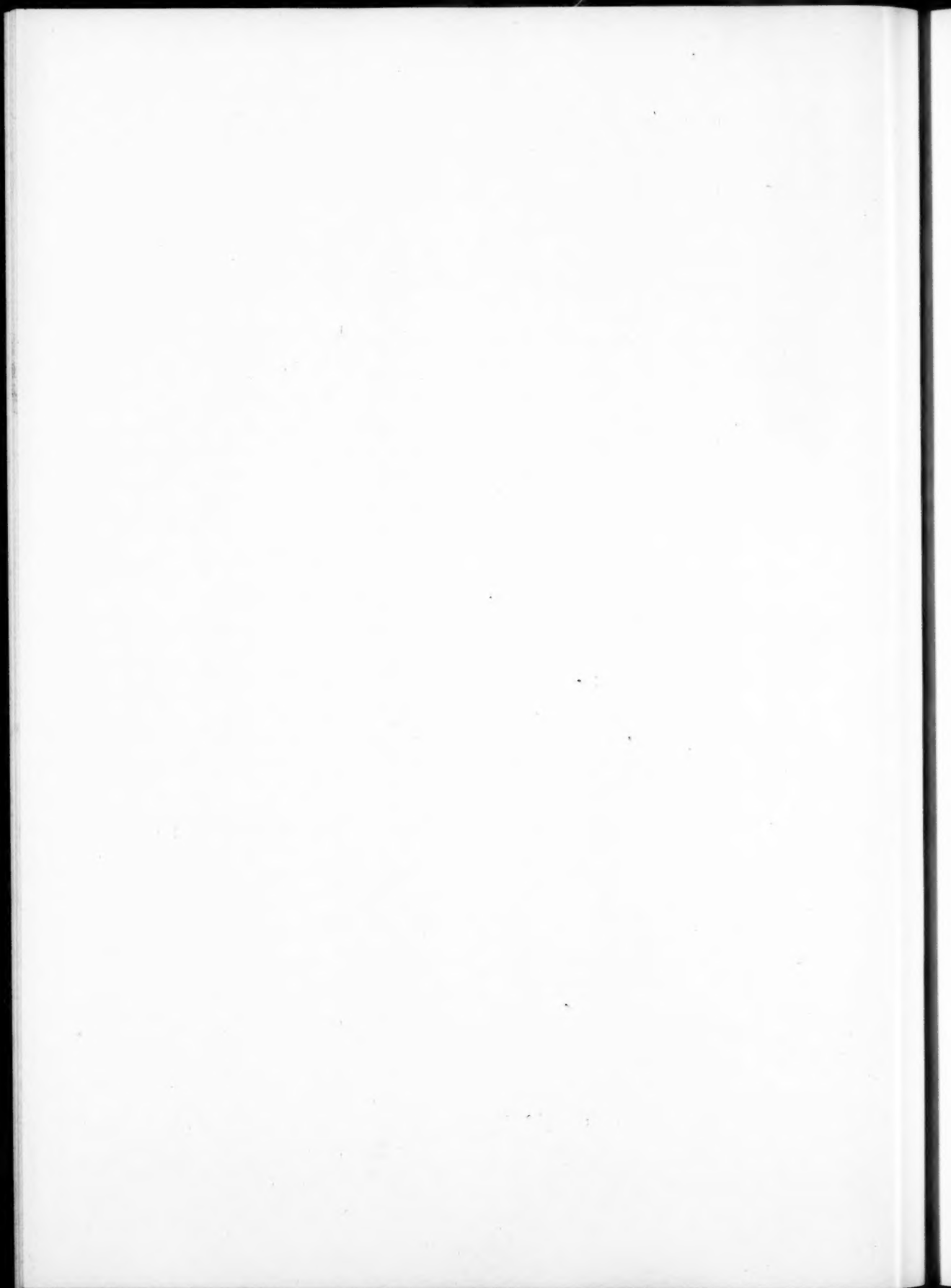
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## ARCHAEOLOGICAL NOTES

### NEW DISCOVERIES IN CHINA

CHINESE workmen who were digging to make an air-raid shelter in Chengtu, Szechwan Province, have been responsible for an important archaeological discovery. Their picks struck a mound of brick and stone work which has been revealed as the grave of Wang Chien, distinguished official and self-appointed Emperor of the 10th century A.D. Chinese and American archaeologists believe that the contents of the coffin, as yet not fully investigated, will prove of great value to archaeologists and historians alike. Facts of this discovery have just reached United China Relief from the Associated Boards for Christian Colleges in China.

Wang Chien's grave was found a quarter of a mile outside the West Gate of the city of Chengtu in an historical mound believed, until now, to owe its fame to association with the Chinese poet, Ssu-ma Hsiang-ju, who died in 117 B.C.

Excavations of the tomb are now going on under the supervision of Dr. Feng Han-I, Harvard-trained Director of the Museum of West China Union University. After clearing away the bricks and stones, the tomb chamber was found lying in a mud casing 15 feet thick. The tomb itself is 80 feet long, 20 feet wide and 20 feet high. At the back of the tomb chamber, on the tomb-throne, was a statue—presumably of the dead man—and lying in front of this was a case, the dragon-shaped handles of which gave the first clue of the regal identity of the occupant. Two other cases, lined with silver and inlaid with silver and gold in discoidal design, contained two sets of jade books, composed of 53 leaves, one foot two inches long, one and a half inches wide and half an inch thick. The inscription shows this to be a long commentary on the "gracious reign" of Emperor Wang Chien. A detailed report of all of the grave furniture, including photographs and sketches, is being prepared by students and faculty members of the Department of Archaeology of West China Union University. The Emperor's coffin is expected to give a wealth of lacquer, pottery, copper and jade.

Wang Chien, who was born about 847 A.D., rose from the generalship to the governorship of Szechwan Province. When the House of T'ang collapsed in 906 A.D., he declared Szechwan to be a new kingdom, and proclaimed himself its Emperor. Chengtu was his capital. It was a city of wealth and culture, and is considered by some historians to have been, at that time, the most civilized city in the world.

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## HELLENISTIC TEXTILES IN NORTHERN MONGOLIA

AMONG the finds of the Kozlov Expedition of 1924-1925 in Northern Mongolia<sup>1</sup> there are a number of textiles which are usually put into three groups: (1) those imported from China; (2) those of Western origin, and (3) those of local workmanship.<sup>2</sup> The second group is distinguished not only by obvious Hellenistic elements, but also by other features which the pieces of this group alone have in common. They are all purple-dyed woollen stuffs, embroidered with wool of various colors.<sup>3</sup> An inscription on a Chinese lacquer bowl of the year 2 B.C. gives the *terminus ante quem* for the entire find from Noin Ula.<sup>4</sup>

The writers who have commented on these textiles have agreed on the Western origin of this second group, but have not gone beyond general attributions to certain areas in the West. Neither has any serious attempt been made to find specific analogies, or to examine individual motifs and their possible prototypes in the Hellenistic world. Trever states the case of these textiles as follows: "coming from the West, certainly not from Greece and her Near East colonies, but belonging to the culture of the Bactrian upper classes and of Parthian Iran, both impregnated with Hellenistic culture."<sup>5</sup> According to Yetts: "the series of textile fabrics . . . are so markedly Hellenic in design that they may be regarded as the work of Greek craftsmen . . . probably the bulk was made in the workshops of Asia Minor or Panticapaeum."<sup>6</sup> Boroffka suggests: "Am wahrscheinlichsten in einer der hellenistischen Kolonien am Schwarzen Meer hergestellt."<sup>7</sup> Rostovtzeff's attribution is also vague: "The style of decoration of these stuffs is the common neo-Ionian orientalized Greek style, perfectly familiar to us from the finds of the Hellenistic period in Syria, Asia Minor, and in South Russia."<sup>8</sup> In speaking of individual pieces within the group, Phyllis Ackerman suggests various parts of the Parthian Empire, because it "was newly reimpregnated with classicism, a Graeco-Iranian style appearing in all parts of the empire, equally: for example, at Dura Europos, in the Pantikapaëon,

<sup>1</sup> *Comptes-rendus des expéditions pour l'exploration du Nord de la Mongolie rattachées à l'expédition Mongolo-Tibétaine de P. K. Kozlov*, Leningrad, 1925.

<sup>2</sup> Cf. C. Trever, *Excavations in Northern Mongolia, 1924-1925*, Leningrad, 1932, p. 13.

<sup>3</sup> *Ibid.*, pp. 29-33.

<sup>4</sup> *Ibid.*, p. 15. Through the courtesy of Prof. Rostovtzeff my attention was called to C. Trever, *Treasures of Greco-Bactrian Art*, Moscow, 1940, p. 142, footnote 2, in which reference is made to A. N. Bernstam, "The Hunnish Burial of Noin Ula and its Historical and Archaeological Significance," *Bulletin of the Academy of Sciences of the USSR*, 1937. According to Trever's footnote, this article, which I was unable to obtain, gives the name of a Hunnish prince buried in one of the graves and the date of his death in A.D. 13. Prof. Hanfmann of Harvard kindly translated for me from the Russian the passage in Trever's book which gives this information. In a review of Trever's *Treasures of Greco-Bactrian Art* in *AJA*, xlv, 1942, p. 300, Rostovtzeff accepts this date.

<sup>5</sup> Trever, *Excavations*, p. 13.

<sup>6</sup> W. Perceval Yetts, "Discoveries of the Kozlov Expedition," *The Burlington Magazine*, 48, 1926, p. 175.

<sup>7</sup> G. Boroffka, "Griechische Stickereien aus der Mongolei," *Die Antike*, 3, 1927, p. 66; cf. Boroffka, "Die Funde der Expedition Koslow in der Mongolei 1924-25," *AA*, 41, 1926, pp. 341-368.

<sup>8</sup> M. Rostovtzeff, *The Animal Style in South Russia and China*, Princeton, 1929, pp. 85-86. Cf. also his *Social and Economic History of the Hellenistic World*, Oxford, 1941, p. 1223 and *AJA*, xlv, 1942, p. 300.

and in the Sistan, so that the Parthians might well have been the transmitting agency to Mongolia." <sup>9</sup>

These opinions have pointed the way for further investigations which I have attempted to present in this paper. Let it be said at the outset that no matter how much investigating is done, it has appeared to me impossible to come to any definite conclusions on the provenance of the whole group, or on specific questions dealing with it. The monuments left us, both material and literary, are far too fragmentary for that. I believe, however, that the material which I have collected may throw some light on this series of textiles and clarify some of the motifs found in them.

There is first the large piece with horsemen (fig. 1).<sup>10</sup> Preserved are parts of four horses, all of them agile, beautifully poised and expressive. Behind them are three men, also only partly preserved. These men are dressed in caps, trousers, and cloaks with a richly-embroidered lattice pattern on the borders. One of the horses displays a prominent *phalera*, with a pattern of small discs. Some of these features point to the Scythians.<sup>11</sup> Yetts says of this piece that it "is an example of Ionian design modified to suit the demands of the Scythian market," and adds: "the treatment of the horses resembles that on some of the Greek vases."<sup>12</sup> This may surely be said. It is also relevant to compare the horses on a Hellenistic ivory plaque, on which we see the same slender type with cropped mane.<sup>13</sup> The lattice pattern also occurs as a textile pattern on Greek vases,<sup>14</sup> and in mosaics of the late Hellenistic and Roman period, as far apart as Olbia,<sup>15</sup> Tunisia,<sup>16</sup> and Pompeii.<sup>17</sup> Another clearly Greek feature is the small frieze of palmettes, spirals, and blossoms which runs below the main panel (fig. 2).<sup>18</sup> The costume of the men may be that of the Scythians, and one need only look at the many Scythians that appear on Greek vases<sup>19</sup> with their trousers, cloaks, and caps to see the resemblance, but it is also that of Iranian men, as may be seen from two Achaemenid statuettes, both representing men wearing trousers, caps and a cloak with a border which may be embroidered.<sup>20</sup>

A textile fragment which may be considered related to the one just discussed is the next in our series from Noin Ula and shows a face in Hellenistic style, full of life and character. The mustache and the two locks of hair on the forehead are significant (fig. 3).<sup>21</sup> This head bears a striking resemblance to a head stated by Fick

<sup>9</sup> Phyllis Ackerman, "Textiles through the Sasanian Period," *A Survey of Persian Art* 1, New York, 1938, p. 690. Miss Ackerman has informed me that she has collected material which will deal with the question more specifically, but which has not been published (Verbal communication, Nov. 24, 1941).

<sup>10</sup> Camilla Trever, *Treasures of Greco-Bactrian Art*, Moscow, 1940, pl. 40.

<sup>11</sup> I use the term *Scythians* because it is generally used in this connection, although the Scythians were no longer the predominant force in these territories. As early as the second century B.C. a related Iranian people, the Sarmatians, superseded them throughout Southern Russia and Western Asia. Cf. M. Rostovtzeff, *Iranians and Greeks in South Russia*, Oxford, 1922, pp. 114-120.

<sup>12</sup> Yetts, *op. cit.*, p. 176.

<sup>13</sup> E. Pfuhl, *MuZ.* 3, fig. 627.

<sup>14</sup> Cf. *ibid.*, fig. 315.

<sup>15</sup> B. W. Pharmakowsky, "Archaeologische Funde im Jahre 1910 in Russland," *AA.* 26, 1911, fig. 21.

<sup>16</sup> P. Gauckler, *Inventaire des Mosaïques de la Gaule et de l'Afrique* 2, Paris, 1910, pl. 25.

<sup>17</sup> E. Pernice, *Die hellenistische Kunst in Pompeji* 6, Berlin, 1938, pls. 9, 17, 26, 29, 32, 33, 35, 36, 46, 48.

<sup>18</sup> Trever, *Treasures of Greco-Bactrian Art*, pl. 41.

<sup>19</sup> Cf. P. Jacobsthal, *Ornamente griechischer Vasen*, Berlin, 1927, pls. 142-143.

<sup>20</sup> *A Survey of Persian Art* 4, pl. 108, figs. A-C.

<sup>21</sup> Trever, *Excav. in N. Mongolia (1924-1925)*, pl. 1.



FIG. 1.—THE FRAGMENT FROM NOIN ULA WITH HORSES AND MEN



FIG. 2.—LOWER BORDER TO FIGURE 1



FIG. 5.—TWO PIECES OF THE PUTTI AND GRIFFIN FRIEZE FROM NOIN ULA



FIG. 3.—THREE-QUARTER VIEW OF HEAD FROM NOIN ULA



FIG. 4.—"A NOBLE SCYTHIAN"

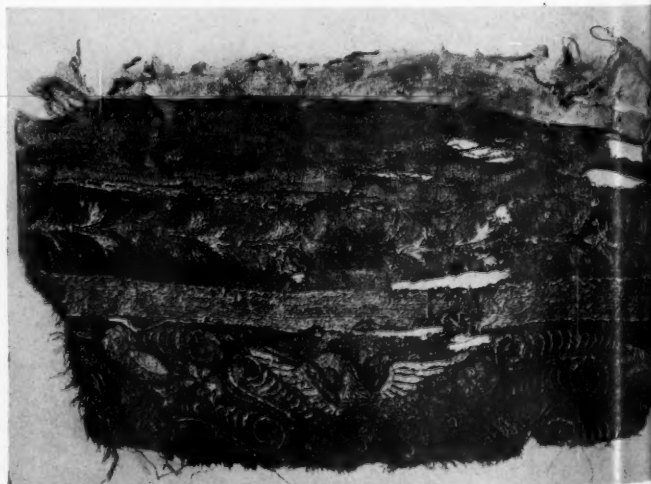


FIG. 6.—A THIRD PIECE OF THE FRIEZE WITH PUTTI AND BIRD

to be that of a noble Scythian (fig. 4),<sup>22</sup> and also to the head of a statuette found by Hackin in Begram and called by him "a mustached barbarian."<sup>23</sup> Phyllis Ackerman calls attention to the similarity of this head to portrait heads on Parthian coins.<sup>24</sup> So, in both of these cases, that of the horses and of this head, there are indications which point to Iranian territory, but which also point strongly to Hellenism.

Next in our series of Noin Ula textiles are a number of pieces which may be grouped together. They represent fragments of a frieze of putti who grow out of plant forms and are armed with a shield and a weapon. These putti are confronted with a griffin-like creature in one case and a bird in another. Of the same frieze two more griffins are preserved, individually, however, without the confronting figure. This motif of putti and griffins seems to be based on the legend or myth of arimasps and griffins, which, in turn, has a definite connection with the Scythians.<sup>25</sup> Interspersed between these various creatures are floral designs and vines which grow into spirals and fill the space between the main components of the design. Even between the legs of the griffins there are small flowers on stems that vaguely remind one of filling ornaments on Corinthian vases (figs. 5, 6, 7).<sup>26</sup> What the entire composition of this frieze was, one cannot say, because only unconnected fragments are preserved. That they belong together, however, is shown not only by the design, but also by the borders that run above and below the various pieces. Above is a band of leaves, olive or laurel, and berries on curiously long tendrils. Such bands of leaves with berries on long stems occur as early as the third century B.C. on vases found in a Hellenistic necropolis in Egypt<sup>27</sup> and in the second century B.C. on a piece of sculpture showing an embroidered veil.<sup>28</sup> In the time of Augustus the motif appears on a bowl of the Boscoreale treasure,<sup>29</sup> and later still, in the first and second centuries A.D., on a group of lead sarcophagi from Tyre in Syria.<sup>30</sup>

Below the main frieze runs a border of various curious formations which probably ultimately go back to a palmette and lotus design and have here degenerated into a form almost unrecognizable (clearly visible in fig. 7). That this motif in its degenerate form was used throughout the Roman world is evident in various examples. A part of a mosaic from a Roman villa in Tunis shows it,<sup>31</sup> as does also a *scutum*

<sup>22</sup> Richard Fick, "Die Buddhistische Kultur und das Erbe Alexanders des Grossen," *Morgenland* 25, 1933, pl. 3, fig. 6.

<sup>23</sup> Joseph Hackin, "The 1939 Dig at Begram," *Asia*, October 1940, pp. 525 ff., fig. 9.

<sup>24</sup> Phyllis Ackerman, *op. cit.*, p. 691.

<sup>25</sup> Roscher, *Ausführliches Lexikon der griechischen und römischen Mythologie* 1, pp. 1767-1770.

<sup>26</sup> Trever, *Treasures of Greco-Bactrian Art*, pls. 41, 43, 44.

<sup>27</sup> E. Breccia, *La Necropoli di Sciatti*, Cairo, 1912, pls. 35, 40, 41, 42; R. Pagenstecher, *Nekropolis*, Leipzig, 1919, p. iii.

<sup>28</sup> A. J. B. Wace, "The Veil of Despoia," *AJA.* 38, 1934, pl. 10; during the Hellenistic period the motif also occurs in the mosaics of Pompeii; cf. Pernice, *op. cit.*, pls. 17, 24.

<sup>29</sup> F. Winter, "Der Silberschatz von Boscoreale," *AA.* 11, 1896, fig. 10.

<sup>30</sup> E. von Mercklin, "Untersuchungen zu den antiken Bleisarkophagen," *Berytus* 3, 1936, pp. 51-75, pl. 11, fig. 5; "Antike Bleisarkophage," *AA.* 51, 1936, p. 260; Carl Watzinger, *Denkmäler Palaestinas* 2, Leipzig, 1935, pp. 103-105, pl. 33, fig. 76; L'Emir Maurice Chéhab, "Sarcophages en Plomb du Musée National Libanais," *Syria*, 15, 1934, p. 338, pl. 41; Arif Muefid, "Die Bleisarkophage im Antiken-museum zu Istanbul," *AA.* 47, 1932, pp. 387-446, figs. 1-4, 22-25, 27-29, 31, 32, 36, 37, 39, 40, 41. Muefid traces the development of these lead sarcophagi to Hellenistic wood sarcophagi (pp. 405 ff.); cf. C. Watzinger, "Griechische Holzarkophage," *WVDOG.* 6, 1905, pls. 1, 2. Note the same motif of leaves and berries on long stems.

<sup>31</sup> P. Gauckler, *Inventaire* 2, pl. 116a.



FIG. 7.—FRAGMENT OF PUTTI FRIEZE SHOWING LOWER BORDER IN DETAIL



FIG. 11.—DETAIL OF GREEK VASE SHOWING SPIRALS AND PALMETTES AND THE "FILLING-IN" OF THE ELONGATED TRIANGULAR SPACES



FIG. 13.—AN OINOCHOE WITH SPIRALS SIMILAR TO THOSE ON THE NOIN ULA FRIEZE

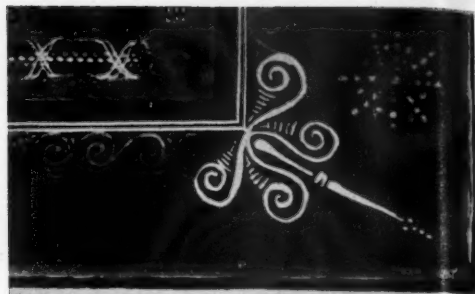


FIG. 8.—DETAIL OF ROMAN *Scutum* FROM DURA EUROPOS



FIG. 9.—STUCCO DECORATION FROM THE FARNESINA



FIG. 10.—DETAIL OF STUCCO DECORATION FROM THE FARNESINA



FIG. 14.—THE RUG WITH FISHES AND TURTLES FROM NOIN ULA

of the third century A.D. found in Dura Europos (fig. 8).<sup>32</sup> Later still, there is a similar ornament, also derived from palmette and lotus, on the shoulder of a vase found by Le Coq in Central Asia.<sup>33</sup>

Yetts has already pointed to certain similarities between the figures in the main frieze of these pieces and parts of the stucco decoration of a villa in Rome of the same period as our textiles.<sup>34</sup> On closer examination, it is indeed remarkable how much of the repertoire of the Noin Ula textiles is present in these reliefs of the Farnesina.<sup>35</sup> It is true, these are more elegant, more refined in style and execution, "vornehmer, ruhiger und geschmackvoller als das Meiste,"<sup>36</sup> but at the same time they do use the motif of the putti growing out of plant forms and confronted with griffins in exactly the way that it is used in our textiles, and even the gesture of the putti is reproduced. Furthermore, flowers and vines are interspersed here in the same fashion (fig. 9).<sup>37</sup> According to Lessing, these combinations are due to "wohlgefallen an phantastischen Mischfiguren, ueber welche (schon) Vitruv klagt."<sup>38</sup> It is also worth noting the close resemblance of the ornament in the lower border with one in the Farnesina (fig. 10).<sup>39</sup> We find here, then, an artist, or a group of artists (according to an inscription they were most likely Greeks)<sup>40</sup> working in Rome, the center of the artistic world of the time, using motifs which are prominent in the textiles of Noin Ula.

That these fantastic motifs were none too unusual in the Roman world at this time (as Mau points out above) is shown by other examples. The hybrid putti and griffins are to be found on a relief in the Lateran Museum;<sup>41</sup> on a gladiator's helmet from Pompeii;<sup>42</sup> in stucco decorations found near the Circus of Caracalla;<sup>43</sup> in a frieze from the "Tempio del Sole;"<sup>44</sup> and finally two bronze putti in a belligerent attitude, without griffins, however, from South Russia.<sup>45</sup> In discussing the piece in the Lateran Museum, Benndorf and Schoene maintain that the motif "zwar frueh beginnt, aber erst gegen die Kaiserzeit um sich greift und zu einem beliebten stehenden Motiv wird."<sup>46</sup>

Very conspicuous between the main forms of the griffin frieze in our textiles are the winding lines and spirals which fill in the space and grow out of the plant forms.

<sup>32</sup> M. Rostovtzeff et al., *The Excavations at Dura Europos, Preliminary Report of Sixth Season of Work October 1932-March 1933*, New Haven, 1936, Frontispiece.

<sup>33</sup> A. von Le Coq, *Die Buddhistische Späantike in Mittelasien* 1, Berlin, 1922, pl. 45.

<sup>34</sup> Yetts, *Burlington Magazine* 48, p. 175.

<sup>35</sup> J. Lessing-Mau, *Wand- und Deckenschmuck eines Römischen Hauses aus der Zeit des Augustus*, Berlin, 1891, pls. 12-14; Emily L. Wadsworth, "Stucco Reliefs of the First and Second Centuries Still Extant in Rome," *MAAR*, 4, 1924, pls. 1, 3; P. Gusman, *L'Art décoratif de Rome* 2, Paris, 1912, pl. 72.

<sup>36</sup> Lessing-Mau, *op. cit.*, p. 3.

<sup>37</sup> *Ibid.*, pl. 12. Cf. also pl. 13.

<sup>38</sup> *Ibid.*, p. 4.

<sup>39</sup> *Ibid.*, pl. 11. The same motif occurs in variations on pls. 3, 4, 5, 8, 9.

<sup>40</sup> *Ibid.*, 5.

<sup>41</sup> Luigi Canina, *Gli Edifici di Roma Antica* 2, Roma, 1848, pl. 119.

<sup>42</sup> H. Bluemner and O. von Schorn, *Geschichte des Kunstgewerbes in Einzeldarstellungen* 2, Leipzig, 1885, p. 214, fig. 131.

<sup>43</sup> Piranesi, vol. 12, pl. 5, F618a; H. Focillon, *Giovanni-Battista Piranesi. Essai de Catalogue Raisonné de son Oeuvre*, Paris, 1918.

<sup>44</sup> L. Canina, *op. cit.* 2, pl. 48.

<sup>45</sup> M. Rostovtzeff, *Antique Decorative Painting in South Russia*, St. Petersburg, 1913-1914, pl. 24, fig. 6.

<sup>46</sup> O. Benndorf-R. Schoene, *Die antiken Bildwerke des Lateranensischen Museums*, Leipzig, 1867, 41.

Between the winding forms are short curved lines, set on the actual spirals and thus giving them the appearance of being seen in perspective.

In late Hellenistic times three types of perspective spirals are used: (1) the perfectly naturalistic grape-vine curling round to form a perspective spiral;<sup>47</sup> (2) the peculiar wide open type of perspective spiral so common on Apulian vases and when used elsewhere perhaps derived from them;<sup>48</sup> and a third type which merely appears like spirals in perspective, but is not actually to be seen as such. It is clear that neither the first group consisting of the naturalistic grape-vine, nor the second, that of the loose and open Apulian vine, has anything in common with the spirals on the Noin Ula textiles. The third group, however, may well be compared to them and shows a close relationship.

Riegl<sup>49</sup> and Jacobsthal,<sup>50</sup> who have studied the development of ornament, have both seen these forms and interpreted them. Such forms as on the Noin Ula textiles appear to be derived from combinations of the flat spiral and the palmette. The first step is the splitting in half of the palmette in order to make possible a more lively and varied composition.<sup>51</sup> This development goes on until through variations the spirals which are originally separate forms at the base of the half palmette are repeated and continued from the tip of the half palmette, there in turn being the base of another half palmette. Finally there is not sufficient space for a half palmette (or the original half palmette is misunderstood) and the triangular space is simply filled in with curved lines. This occurs, then, in a number of examples and establishes the prototype of our spirals which seem to be seen in perspective (figs. 11,<sup>52</sup> 12,<sup>53</sup> 13<sup>54</sup>).

<sup>47</sup> Cf. on Arretine vases of the Metropolitan Museum, New York, no. 19.192.16; no. 19.192.17; no. 19.192.23; on silver bowls found with Roman coins of the first and second century A.D. in Iran, *A Survey of Persian Art* 4, pl. 137 A-B; on a piece of the Hildesheim silver treasure, E. Pernice and F. Winter, *Der Hildesheimer Silberfund*, Berlin, 1901, pl. 29; on a series of capitals from the inner propylaea of Eleusis, Hans Hoermann, *Die inneren Propyläen von Eleusis*, Berlin, 1932, pls. 47-49; on a glass amphora found in Pompeii, A. Kisa, *Das Glas im Altertum* 2, Leipzig, 1908, pls. 8, 9.

<sup>48</sup> Cf. on Apulian vases of the Metropolitan Museum, New York, no. G.R. 659; no. 17.120.240; on a terracotta plaque in the Villa Giulia, Gusman, *op. cit.* 2, pl. 71; on a fragment from Samothrace, A. Conze, A. Hauser, Otto Benndorf, *Untersuchungen auf Samothrake* 2, Wien, 1880, pl. 10; on a frieze fragment, Otto Rubensohn, *Hellenistisches Silbergeräat in Antiken Gipsabgüssen*, Berlin, 1911, pl. 7 a, b, c, d; a fragment in Berlin, Koenigliche Museen zu Berlin, *Beschreibung der Antiken Skulpturen*, Berlin, 1891, no. 1016; on the great altar at Pergamon, G. Kawerau and Th. Wiegand, *Altertüemer von Pergamon* 3 (1), Berlin, 1904, pl. 18, fig. 2; on part of an entablature of the second and first century B.C. in Pergamon, *ibid.* 5 (1), text, fig. 73; and in a mosaic at Pergamon, *ibid.* 5 (1), pls. 16, 17, 18; and in a similar mosaic in Antioch, G. W. Elderkin, ed., *Antioch On-The-Orontes* 1, Princeton, 1934, figs. 6, 7, 9; in tomb paintings in South Russia, M. Rostovtzeff, *op. cit.* pl. 7, figs. 2, 3, pl. 38.

<sup>49</sup> A. Riegl, *Stilfragen*, Berlin, 1923. <sup>50</sup> P. Jacobsthal, *Ornamente griechischer Vasen*, Berlin, 1927.

<sup>51</sup> *Ibid.*, pp. 162-163; Riegl, *op. cit.* p. 240. The whole development may well be followed in Jacobsthal, *op. cit.* pls. 107 b, 108 b, 110 b, 111 a, b, 113 a, b, 115 a, c, 116 a.

<sup>52</sup> Jacobsthal, *op. cit.* pl. 116a.

<sup>53</sup> P. V. C. Baur, *Catalogue of the Rebecca Darlington Stoddard Collection of Greek and Italian Vases in Yale University*, New Haven, 1922, pl. 9.

<sup>54</sup> A. Brueckner, "Anakalypteria," 64. *Programm zum Winkelmannsfest*, Berlin, 1904.



FIG. 12.—DETAIL OF GREEK VASE SHOWING USE OF SPIRALS AND OF "FILLING-IN" BETWEEN RATHER ARBITRARY LINES

Curiously enough, Jacobsthal sees in the Noin Ula spirals a separate development. He believes it is a "Rueckstilisierung" from a naturalistic perspective spiral of the Apulian type.<sup>56</sup> In my opinion, that is very unlikely when the Noin Ula spirals are viewed in the light of the development just traced. It is also relevant that the initial flat spiral ends in the center in a small trefoil and does not go on into the volutes as a perspective spiral must. Riegl, on the other hand, who did not know the Noin Ula finds, makes an interesting comparison of these curved lines over flat spirals with very similar forms in Mycenaean gold work: "die Schraffierungen kehren . . . auf mykenischen Goldsachen haeufig wieder, dienen aber immer als eine Art Zwickelfuellung fuer bloss einfache Spiralen, so dass sie sozusagen Halbpalmetten bilden. . . . Ich stehe nicht an (sie) als Vorlaeufer dieser Entwicklung zu betrachten,"<sup>56</sup> (namely of the development discussed above). He, as well as Jacobsthal, sees a link in ornaments on Klazomenian sarcophagi which show spirals and half palmettes in the "Zwickel."<sup>57</sup>

Most of the examples cited above on Greek vases are considerably earlier than the textiles under discussion. The use of the flat spiral with superimposed lines which give it the illusion of perspective must, however, have become a convention used far into Roman times. A variation of the motif (but clearly of the same origin and essentially the same thing) has already been discussed in the Roman mosaic from Tunis and the Roman *scutum* from Dura Europos (fig. 8). To this may be added other occurrences in Roman mosaics from Tunis.<sup>58</sup>

A very interesting frieze on a Hellenistic vase from the necropolis of Sciatbi in North Africa shows the Apulian use of the loose spiral, the true perspective spiral, but with turning and twisting floral patterns, among others the trefoil, filling the entire space. In the artist's desire to do this, in the lack of true organization and in the loose and degenerate forms, it reminds one of the frieze group of Noin Ula.<sup>59</sup>

A final piece in this series of textiles from Mongolia is a rug with a pattern of fishes and turtles between ornaments of connecting spirals and heart-shaped leaves. This is bordered by a simple rope pattern, a delicate rinceau, an elaborate pattern of leaves and flowers, then the same rinceau and rope patterns again. The whole is enclosed by a piece of Chinese silk with a lozenge pattern (fig. 14).<sup>60</sup> In spite of the innumerable occurrences of fishes and other water animals in Hellenistic and Roman mosaics and paintings,<sup>61</sup> I have not been able to find any instance of an analogy to this centerpiece with its ornament and organization. The rope and rinceau patterns are obvious. Interestingly enough, the next pattern, the border of flowers and leaves, takes us back to two points which we have touched on before, namely the Farnesina reliefs and the Tunis mosaics. In both cases we have designs which come very close to the textile design. The Noin Ula form is still naturalistic, full of life. A flower of rectangular shape with emerging buds is in the center, and at either side is a round flower with leaves projecting from it toward the central flower. In Rome

<sup>56</sup> Jacobsthal, *op. cit.* pp. 201-202.

<sup>56</sup> Riegl, *op. cit.* pp. 144-145, pl. 65.

<sup>57</sup> *Ibid.* 172; Jacobsthal, *op. cit.* pp. 150-151.

<sup>58</sup> Gauckler, *Inventaire* 2, pls. 67, 319, 376, 764; A. Merlin and L. Poinssot, "Deux Mosaïques de Tunisie," *MonPiot* 34, 1934, pl. 9, fig. 1.

<sup>59</sup> Breccia, *La Necropoli di Sciatbi*, Cairo, 1912, pl. 35, fig. 42.

<sup>60</sup> Trever, *Excavations in Northern Mongolia*, pl. 5.

<sup>61</sup> Cf. Gauckler, *op. cit.* 2.

the same design is elegantly stylized. The large flower of the Noin Ula form has become a small central flower of round petals with two buds emerging from it and with four volutes forming a square pattern around it. To either side is a more pointed flower with long spreading volutes which would form a sort of cartouche if extended to both sides (fig. 15).<sup>62</sup> This may be seen in the Tunis mosaic, where the flower of pointed petals is actually enclosed by a schematic cartouche and the other flower has become a circle with its four volutes (fig. 16).<sup>63</sup> When the three are compared, it becomes clear immediately that they are all variations on the same theme. The Noin Ula form is more naturalistic and is therefore most likely closer to a Hellenistic prototype which must also be the source of both the later Roman forms.

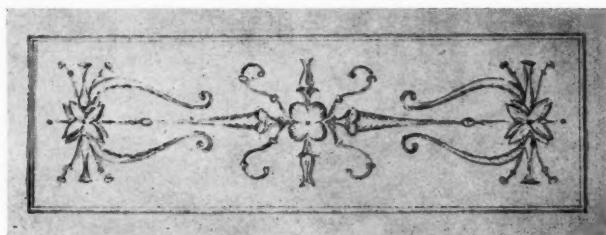


FIG. 15.—STUCCO DETAIL FROM THE FARNESINA



FIG. 16.—DETAIL OF MOSAIC FROM TUNIS

None of these observations allows for any definite conclusions as to the place of origin, for that could be, as far as we are able to see from the scant material evidence, anywhere in Africa, Syria, Asia Minor, or the Black Sea region. The forms occur over the entire area. It is possible that different pieces of the series were made in different places, because, for example, it seems unlikely to me that the piece with the horsemen could have been done in the same workshop as the frieze of putti and griffins, but nothing more definite can at present be discerned from the monuments themselves. I believe, however, that the material collected and discussed here provides the background from which such pieces as the Noin Ula textiles originated, and that background is the Hellenistic art preceding the age of Augustus.

In examining the relevant literary sources the most important question is that of the transmission of the textiles from the West to the Hsiung-nu in Mongolia at the end of the first century B.C. In the first half of the second century B.C., after the fall of the Ch'in Dynasty in China, the Hsiung-nu of the territory north of China were able to spread their power over all of Central Asia<sup>64</sup> until the growing power of the Han checked them, particularly after the expedition of Chang K'ien and the following strong policy of the emperor Wu Ti.<sup>65</sup> How conditions were in Central Asia before the Hsiung-nu were driven out may be seen from the following: "Osun and the far West to An-sih were situated close to the Hung-nō, who had at

<sup>62</sup> Lessing-Mau, *Wand- und Deckenschmuck*, pl. 11. Cf. variations of the same motif: pls. 3, 5, 8.

<sup>63</sup> Gauckler, *op. cit.* 2, pl. 86.

<sup>64</sup> J. J. M. de Groot, *Chinesische Urkunden zur Geschichte Asiens*, Berlin, 1921-26, 1, pp. 61 ff.

<sup>65</sup> *Ibid.* 2, pp. 20 ff.

that time subdued even the Goat-si (Yüeh-Ch'i). Therefore, the passage of ambassadors of the Hung-nō who had a written pass from the Tan-hu was facilitated from one principality to the next, and they were furnished with all necessities without ever being impeded or molested in any way. . . . The ambassadors of the Hung-nō were shown more respect than those of the Han."<sup>66</sup> There was, then, in the second century B.C., an empire of the Hsiung-nu that stretched from China all the way to the West and communications were kept open to their emissaries even after the struggle with the Han had begun and parts of their empire had been lost to them.

In the first half of the first century B.C. the Hsiung-nu made another push into the Western region, but were again driven out and in the sixties the Hunnish empire collapsed completely.<sup>67</sup> In 54 B.C. the Tan-hu Hō-han-sa declared himself a vassal of the Han.<sup>68</sup> His brother Tsit-ki rebelled and again turned West with a part of his people, but in 36 B.C. he was decisively beaten and killed by Han forces.<sup>69</sup> Speculating on the situation which ensued, de Groot says: "What became of his city and his empire after the destruction of Tsit-ki? This question cannot be answered with certainty, because the Chinese sources say nothing about it. If the Empire had been allowed a continued independent existence as a dangerous neighboring state, this silence of the Han annals would be inexplicable. Therefore, it is reasonable to assume that the Western Hunnish Empire was given back to Hō-han-sa, the Tan-hu recognized as legitimate by the Han. A united Hunnish Empire reaching almost to the boundaries of Europe and governed from the Orchon is therefore an historical probability."<sup>70</sup> But that is precisely what the Chinese feared more than anything else and would never have permitted while it was in their power to prevent it. It seems certain to me that all of Central Asia remained under the Han and was not given over again to the Hsiung-nu who were weakened and their vassals for the time being, but whom nevertheless the Chinese continued to regard as their one mortal enemy, as events before and after show.

There was, then, in the second and into the beginning of the first century B.C. the possibility of direct contact between the Hsiung-nu and the West, but after that the Chinese succeeded in cutting them off, isolating them in the true Hsiung-nu region of Mongolia and keeping them in subjection (until the period of Wang Mang when they found another opportunity to rise and attack southward and westward).<sup>71</sup> It seems to me impossible to suppose that the textiles found in Noin Ula in Mongolia, together with objects dated 2 B.C., could have gotten there and been used by the Hsiung-nu chieftains as much as a century earlier, when they did have direct contact. Later, when it would seem more reasonable that the chieftains would have acquired these textiles, the political, social, and geographical situation of the Hsiung-nu made it extremely unlikely that they themselves were the direct recipients from the West. On the other hand, even during the second century B.C. and continuously from then on, the Hsiung-nu had contacts with the Chinese,

<sup>66</sup> J. J. M. de Groot, *op. cit.* 2, p. 34.

<sup>67</sup> *Ibid.* 1, pp. 189-200.

<sup>68</sup> *Ibid.* 1, p. 225.

<sup>69</sup> *Ibid.* 1, p. 215.

<sup>70</sup> *Ibid.* 1, p. 238.

<sup>71</sup> For the policy of Wang Mang which led to this change, cf. Otto Franke, *Geschichte des Chinesischen Reiches*, Berlin, 1930, 1, pp. 382 ff.

which meant their princes received Chinese princesses in marriage and rich gifts, sometimes to appease them and keep them from overrunning the border regions, sometimes as presents to them as vassals.<sup>72</sup> Furthermore, from a number of episodes in the Han annals, de Groot concludes: "We learn from the very best sources that at that time the Hung-nō were by no means considered as uncivilized, despicable barbarians in China, but that, on the contrary, the emperor had full confidence in them, and they often held high positions and honors. We also learn that not only entire tribes of the Hung-nō, but also their noble families settled in China and became Chinese citizens."<sup>73</sup>

In 52 B.C. the Tan-hu Hō-han-sā was allowed to come to the Imperial Court for the first time and there received even richer gifts of silks and other objects than the Hsiung-nu had received before. The list contains among other things: "77 dresses and coats, 8000 pieces of gold-embroidered silk, thin silks woven with flower designs; furthermore a variety of textiles, and finally 6000 pounds of raw silk."<sup>74</sup> In 33 B.C. he is given a Chinese princess in marriage and all the presents are doubled.<sup>75</sup>

Particularly in the second half of the first century B.C., which is the most likely time when the textiles of Noin Ula came to Mongolia, China was the source of all such luxury goods for the Hsiung-nu. It would be most hazardous to assume that a Hsiung-nu chieftain received this superb collection of Hellenistic textiles through direct contact with the West at a time when he and his people were in a state of complete subjection to the Chinese and reduced to a small territory. Much more likely these textiles were brought to China from the West in the course of the large trade that was carried on between these two regions, and then they were passed on by the Chinese as one of their peace offerings to the Hsiung-nu.

Hirth's research has given us some interesting facts about the Chinese trade with the West. He mentions the well known importance of the Syrian cities, where the silk textiles from China underwent a "process of dyeing, chiefly purple dyeing, at Tyre or Sidon, or that of being re woven at Berytus or Tyre,"<sup>76</sup> before they were thrown on the Roman market. This purple dyeing industry in Syria is important in view of the fact that all the textiles of our series from Noin Ula are purple dyed.<sup>77</sup> Furthermore, Chinese sources (of a somewhat later date, but undoubtedly reflecting long standing conditions) in their listings of goods imported from Tarts'in<sup>78</sup> reveal that next in importance only to gems, pearls, etc. "were the textile fabrics produced in the eastern provinces of the Roman Empire. The list of piece goods furnished by the Wei-liu alone contains eighteen varieties. Some of these were stated to occur in five colours, whereas one variety is stated to occur in nine colours."<sup>79</sup> Hirth points out that "the factories where cloth of all kinds was woven,

<sup>72</sup> De Groot, *op. cit.* i, pp. 69, 78-79, 80, 91, 216, 239, 247; for a particularly interesting episode which shows up Chinese "gifts" as appeasement, cf. page 83.

<sup>73</sup> *Ibid.* i, p. 133.

<sup>74</sup> *Ibid.* i, p. 216.

<sup>75</sup> *Ibid.* i, p. 239.

<sup>76</sup> F. Hirth, *China and the Roman Orient*, Leipzig, 1885, p. 158.

<sup>77</sup> For a basic discussion of purple and purple-dyeing during antiquity cf. W. Adolph Schmidt, *Forschungen auf dem Gebiete des Alterthums, Die Griechischen Papyrusurkunden der Koeniglichen Bibliothek zu Berlin i*, Berlin, 1842.

<sup>78</sup> Identified by Hirth, *op. cit.*, p. vi, as "the 'oriental part' of the Roman Empire, viz., Syria, Egypt and Asia Minor; and Syria in the first instance."

<sup>79</sup> Hirth, *op. cit.*, pp. 247-8.

embroidered or dyed . . . were about all on territory belonging to the district called 'Orient'; I mean the manufacturing cities of Tyre, Sidon, Berytus and others of ancient Phoenician renown, certain districts in Asia Minor, and, not amongst the least, the commercial capital of the empire, Alexandria. Syria and Egypt probably supplied the greater part of the articles forming the trade in textile fabrics."<sup>80</sup> This describes the provenance of the Noin Ula textiles about as accurately as can possibly be done, except that even greater emphasis should be placed on Syria, because the great up-surge of Alexandria did not come until Augustus and after, and that is just later than the date of the Noin Ula fabrics.

Thus from the evidence that could be gathered, it may be said that the Noin Ula textiles of the series under discussion use a repertoire of motifs in vogue in Rome itself as well as all through the Empire, but in a style more close to the Hellenistic prototypes. Considering political conditions in Asia at the time, it seems likely that the Hsiung-nu did not receive the textiles from the West themselves, but as gifts from the Chinese who got them through their much used channels of commerce from the Eastern outposts of the Roman Empire. In view of the commercial data concerning the Syrian cities and because of the fact that our entire series of fabrics is purple-dyed, it may be said to be probable that these textiles were made somewhere in Syria.

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<sup>80</sup> Hirth, *op. cit.*, pp. 252-3.

## THE BRESCIA CASKET

### A PROBLEM IN LATE ANTIQUE PERSPECTIVE

THE museum at Brescia contains an ivory casket of the early Christian period, the so-called *Lipsanoteka*, which for decades has been an object of keen scholarly interest. The reliquary is a smallish oblong box, which dates probably in the last quarter of the fourth century, and in its time is unique for the richness and iconographic importance of its carved decoration. In the midst of a remarkably wide repertory of scenes from the Old and New Testaments, one composition is given particular importance by its place at the center of the front panel: a group of seven male figures, probably intended to represent Christ teaching the apostles (fig. 1). The

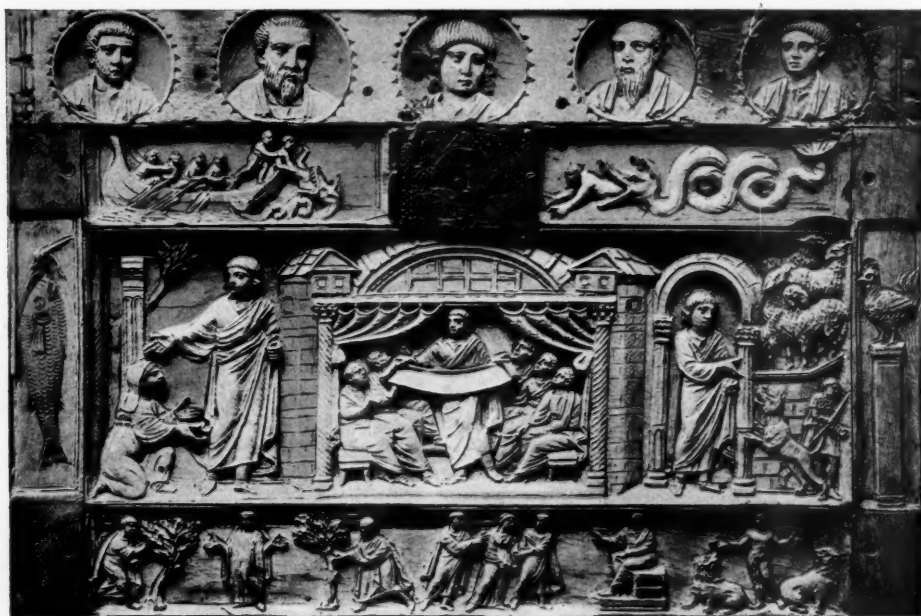


FIG. 1.—BRESCIA, MUSEO CIVICO. IVORY RELIC CASKET, FRONT

subject as such is a commonplace one, met frequently in the Roman catacombs; what distinguishes the *Lipsanoteka* version from all others is its unprecedented architectural setting.

The small building in which Christ and His followers are placed, with its arched roof and twin towers, has not passed without notice through earlier criticism. In the long struggle to locate the Brescia casket in some center of ivory production either in the East or the West of the late Roman empire, no attribution has been so respected as that of Strzygowski, made in 1903 in his *Kleinasien* and based almost entirely on the architecture of this scene of Christ teaching. To Strzygowski, the

building was obviously meant to represent a Christian church, a basilica with a barrel-vaulted nave and a façade flanked by symmetrical towers. Such a scheme is found in the early Christian period only in the Near East; therefore, the Brescia ivory was produced in some city of Asia Minor or Syria.<sup>1</sup>

This characteristically intrepid opinion, which overawed a whole generation of critics, has recently been disputed in the first important study to be dedicated to the casket alone: J. Kollwitz, *Die Lipsanothek von Brescia*, published in 1933.<sup>2</sup> To Kollwitz, the early date of the ivory and its general retention of classical atmosphere make it unlikely that the building would have any specifically Christian character. He points out, aptly enough, that Strzygowski's basilicas in the Near East begin to be known only a century or more later, and that there is no proof that they had predecessors of the same form at the end of the fourth. The two crucial elements of design are both well known formulae in Roman secular building; the barrel vault is at home all over the Mediterranean world, while the pair of flanking towers appears in a Latin environment as terminal motives for the villa as early as Pompeii. Kollwitz concludes that the architecture of the Brescia casket offers no safe evidence of its place of origin.

As a long-needed rebuttal of Strzygowski's dictum, this reasoning seems to me entirely adequate. I have been interested in pushing the argument a step further. The setting for Christ and His apostles is certainly no cross-section through a basilica in Asia Minor; I have come to the rather surprising conclusion that it stands as an independent building of any sort only by a kind of accident of representation.

The world-famous portrait of Arnolfini and his wife by Jan van Eyck is one of the earliest examples in European art of a pictorial form which has since become a commonplace: the realistic room interior. The figures stand within a space which is convincingly described by linear perspective. The lack of any interruption between this space and the borders of the picture gives the spectator a sense of being within the room itself, only a few feet away from its nearest elements. The simplicity of the solution makes it seem almost inevitable, to our sophisticated eyes. In its own age it was, of course, a bold innovation. In earlier centuries of European art, such a setting as van Eyck's would have been unimaginable. A convincing optical relationship between figures and architecture had been one of those aspects of mundane rationalism in which the Mediaeval mind took no interest. Confronted by the same problem, the Mediaeval artist had frequently denied all spatial connection whatsoever by reducing his architecture to a flat conventionalized screen behind the figures. On a slightly higher level of understanding, he had repeated through countless variations the formula which came to be standard for the Gothic style: a sort of doll's house with the front wall removed to show the room inside and its actors.<sup>3</sup> In general terms, it is this same copyist's cliché, the architectural setting which is both

<sup>1</sup> J. Strzygowski, *Kleinasiens*, Leipzig, 1903, p. 213.

<sup>2</sup> J. Kollwitz, *Die Lipsanothek von Brescia*, Berlin and Leipzig, 1933.

<sup>3</sup> An excellent account of the general problems and specific solutions of space representation in the Middle Ages has recently been given by M. Bunim, *Space in Mediaeval Painting and the Forerunners of Perspective*, New York, 1940.

an exterior and an interior view, which appears at the beginning of the Christian Middle Ages on the Brescia casket.

In classical antiquity, the realistic perspective interior as it was to be worked out by Jan van Eyck was a rare and probably late phenomenon. Classical Greek art shows, of course, almost no interest in such specific indications of environment. The Hellenistic paintings of Pompeii, again, make frequent use of an interior setting in illustrating the classical myths; but the convention which they habitually use has the essential formality of the theater from which it was derived; the figures appear as if on an open stage or porch, and the actual interior seems to begin behind them, like a back-drop, instead of serving as a real enclosure. For the illustration of a continuous narrative, by scroll or book, we might expect to find in classical art at once a greater interest in literal representation, and less dependence on a pictorial tradition dominated by the artificiality of the theater. The earlier type of such illustration, however, the scroll, is in its essential form antagonistic to the idea of a really convincing interior. The problems posed by the rotulus form may be seen in one variant on the triumphal columns of the second century; or in another in the illustrations of the fifth-century *Vienna Genesis*, itself a codex, but retaining the strongest memories of a scroll tradition.<sup>4</sup> As part of a scheme of continuous narration, running with the length of the scroll, an architectural setting naturally takes the form of a building placed in landscape. An interior view is possible within this convention only by the doll's house method of removing walls or roof or both. The difficulty will be met in the same general way wherever the scroll is dominant, from the Mediterranean world to the Far East.<sup>5</sup>

Conditions wholly favorable to the development of a realistic interior space in classical art appear only with the emergence of the codex as a substitute for the scroll. The separate pages of the book break down the continuous narrative into independent scenes; the picture at the top of each page, clearly marked by its own border, has at last the isolation of an easel painting. Thus, it is quite natural that the first remaining appearance in the antique world of a setting comparable to that of the Arnolfini portrait should be in a manuscript codex which fulfils these conditions, the first *Vatican Vergil*,<sup>6</sup> dating probably in the fourth century. The illustrative ideal is still a literal and realistic one, while the framed and isolated picture panel at last has made it possible to show an interior alone, and to give the illusion of a single space enclosing both the spectator and the actors whom he is watching (figs. 2, 3).

It is obvious, at the same time, that the *Vatican Vergil* miniatures cannot stand at the beginning of such an advance in classical space representation, but must

<sup>4</sup> Von Hartel and Wickhoff, *Die Wiener Genesis*, Vienna, 1895.

<sup>5</sup> The problems of combining figure action, architecture, and landscape in the continuous horizontal band furnished by the scroll are typically solved for Far Eastern Buddhism by the illustrations of the sūtra *Kakō-genzai-inga-kyō*, copied in eighth-century Japan (presumably from an earlier Chinese prototype; cf. reproductions in *Nihonga-taisei*, Tōkyō, 1931, XVI.) The doll's house method there used appears earlier in India, e.g. in the Ajantā frescoes. In Japanese illustration from the eleventh century on, an extreme of conventionalization is reached by showing the architecture in a steep bird's-eye view with roofs and ceilings removed.

<sup>6</sup> Published in facsimile by the Vatican Library as *Fragmenta et Picturae Vergiliana Codicis Vaticani 3225*, Rome, 1899.

represent instead a fairly advanced stage of decadence. The scene of Dido on her funeral pyre, for example (fig. 3), must have behind its fourth-century clumsiness some much more competent prototype. It must stand, indeed, well toward the end of an established tradition of realistic interiors, reaching back perhaps to the second century A.D.; a lost series of late antique room views, constructed in a more or less adequate perspective and holding the figures in a convincing relationship in space. With the Vergil miniature, the realistic tradition has already begun to break down. The artist still has been able to handle a coffered ceiling competently, and his side wall on the right still projects forward; on the left, his desire to include a side door, and his indifference to the meaning of the forms he has inherited, have led him to present the doorway in full front elevation, completely upsetting the illusion



FIG. 2. — ROME, VATICAN LIBRARY. FIRST VERGIL. DEATH OF DIDO



FIG. 3. — ROME, VATICAN LIBRARY. FIRST VERGIL. AENEAS' DREAM

of perspective. This is a process familiar enough in the reversion of classical art to more primitive standards; a disintegration of organisms into their component parts, each to be shown for its own sake and in its own most telling aspect.

The break-up begun in the *Vatican Vergil* may be followed to its end in succeeding centuries. Various examples may be cited to show the persistence of the interior formula into art of the Christian period, to a final stage where misapplication makes it almost unrecognizable. Around 400 the scheme is still clear on the ivory diptych of Probianus, where a simple room interior in perspective forms the background to the figure of the vicar of Rome.<sup>7</sup> Later versions show an almost haphazard retention of the formula, in an age no longer interested in space of any sort. At San Vitale, in the sixth century, Justinian and his courtiers stand under the same sort of ceiling as the emphatic coffers of the *Vatican Vergil*. The companion mosaic of Theodora, however, has reverted to a completely flat backdrop.<sup>8</sup> It is the ceiling with its re-

<sup>7</sup> R. Delbrueck, *Die Consulardiptychen*, Berlin, 1929, N 65.

<sup>8</sup> Among countless reproductions: Kömstedt, *Vormittelalterliche Malerei*, Augsburg, 1929, pp. 54, 55.

ceding lines which survives the longest, when the rest of the realistic room has long since disappeared. In this vestigial state, it may turn up in extraordinary places. Granting the strength of Alexandrian conservatism, it might be expected in a Coptic fresco from Bawit, of David playing before Saul, where the half-barbaric drawing still retains strong memories of some late antique prototype.<sup>9</sup> Much more surprising is its appearance, in roughly contemporary frescoes of around 500 A.D., in Chinese Turkestan, in Buddhist use; there one must imagine a line of transmission running through the Gandharan style, the earlier examples of which have disappeared as completely as the prototypes of the *Vatican Vergil*.<sup>10</sup>

The reawakened ambition of the Carolingian Renaissance brings one more proper interior, in the Moses scene of the Bible of Moutier-Grandval,<sup>11</sup> produced by the scriptorium of Tours around 825 (fig. 4); by a determined effort of imitation, this is actually closer to what must have been the realistic standard of the second or third century than the *Vatican Vergil* itself. The strain of maintaining such an artificial level in the ninth, however, is clearly shown by a sister manuscript from Tours a generation later, the Bible of Count Vivien,<sup>12</sup> copied in part from the same late antique prototype as Moutier-Grandval. In most scenes the parallels between the two bibles are close; in the Moses picture, the later work shrinks from attempting the complexity of a perspective interior, and places its figures out of doors instead, with the *exterior* of a basilica—the orthodox mediaeval solution—as a flat background (fig. 5).

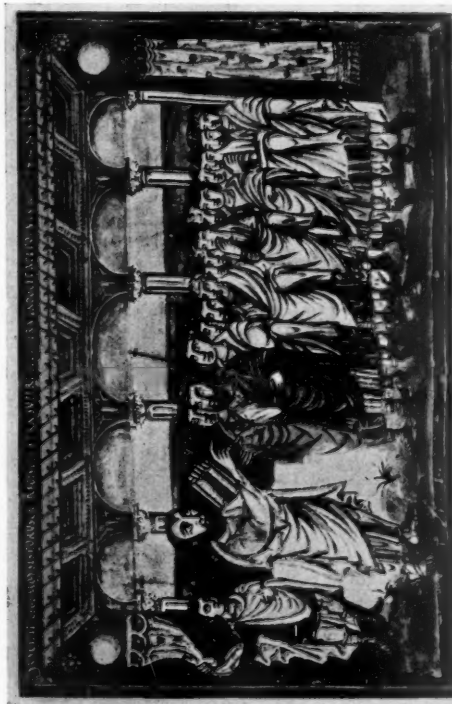
The relationship of this long series to the fourth-century Brescia casket is made clear by a second miniature of the *Vatican Vergil* (fig. 3). This room is covered not by a coffered ceiling, but by a barrel vault. What is apparently a wall across the rear ends at the cornice level in a window, through which a crescent moon is visible. On each side the advancing walls seem to be penetrated by doorways. At first sight, this interior seems much more competently handled than the flat-ceiling type; closer examination shows that here also the artist stands well toward the end of a realistic tradition, which he has repeated without any clear understanding. The side walls appear in perspective at the top, but terminate at the bottom in a horizontal base line. The two miniatures with flat ceilings show a floor which runs back to the rear wall and there stops; here there is no clear relationship between floor and walls, so that Aeneas' couch seems to project beyond the columns to the rear. Worst of all is the vault. The painter who could repeat a flat-coffered formula convincingly enough, is here thoroughly at sea, with a more difficult form. Once again his solution marks the beginning of a process of organic disintegration. The vault which crowns this interior is now rendered as it might look if seen from the outside, with a

<sup>9</sup> Cf. J. Clédat, *Le monastère et la nécropole de Baouît*, Cairo (Institut français d'archéologie orientale xii).

<sup>10</sup> A. Grünwedel, *Altbuddhistische Kultstätten in Chinesisch Turkestan*, Berlin, 1925; the "cave with the zebu cart," figs. 280, 284.

<sup>11</sup> W. Köhler, *Die Karolingischen Miniaturen i, Die Schule von Tours*, Berlin, 1933, pp. 22–27.

<sup>12</sup> *Ibid.*, pp. 39–45, 115–118, 129–132, 148–153. Köhler believes that the prototype must have been a late antique work, for stylistic reasons, and for reasons of theological content, holds that it can probably be ascribed to the time of Pope Leo the Great, around the middle of the fifth century. Cf. *ibid.*, pp. 164–212.



1 2 3 4 5 6 7 8 9 10



FIG. 4. — LONDON, BRITISH MUSEUM. BIBLE OF MOUTIER-GRANDVAL. MOSES WITH THE TABLETS OF THE LAW

FIG. 5. — (BELOW) PARIS, BIBLIOTHÈQUE NATIONALE. BIBLE OF COUNT VIVIEN. MOSES WITH THE TABLETS OF THE LAW



FIG. 6. — BOHEMIA, GRAF HARRACH COLLECTION. IVORY BOOK COVER

complete set of exterior tiles, and with the upper corners of the panel opened to show a night sky and stars. As a climax of confusion, the painter has made his tiles all run the wrong way, parallel to the ridge instead of with the slope. The space thus described still looks more like a realistic interior than anything else, but it is perilously close to losing its identity; close to the mediaeval surrender of the doll's-house view, seen half indoors and half out.

It seems to me an immediately following step toward mediaevalism which has been taken in the Brescia casket (fig. 1). The resemblances between the latter's architecture and that of the *Vatican Vergil* are striking. There are the same columns at the angles of the room, the window above—here given a structural reticulation—and even the same vault with tiles running the wrong way. The similarities are so strong and refer to such apparently casual elements as to suggest that the building on the casket was derived in some way from an interior formula closely linked to that of the *Vergil*. If we pursue this possibility by setting aside the towers for a moment, we shall see that a change in one small detail has been sufficient to make over the ivory's setting from a half realistic interior into the doll's house of the Middle Ages. Where the painter of the *Vergil* had been uncertain about the intersection of his side walls with the ground plane, the sculptor of the casket has indicated them as receding, not coming forward (in the "expanding" perspective of non-realistic art). By this change alone, the building has been turned inside out; and the lunette which has been at the rear of the room now marks its façade. Without any further adjustment, the figures which had once been safe indoors would have been left out in the cold in front, like Moses and his companions in the Count Vivien Bible (fig. 5). The sculptor, however, could restore the sense of enclosure lost through linear means, by mere depth of relief. It was perhaps as much to consolidate the dubious position of the figures, as to suggest their importance, that he added his parted curtain above (and supposedly in front). The whole process of change seems to me to have involved the sort of optical trickery to which perspective lends itself even today, in its less serious reaches, and which in the fourth century could go a long way without arousing the opposition of reason.

A comparable instance of an architectural setting turned "inside out" by mediaeval misunderstanding is given by a ninth-century ivory book cover of the Ada group, belonging to the Harrach collection.<sup>13</sup> The cover presents the typical Evangelist portraits of the Ada tradition, each seated under an arched frame (fig. 6). In the Ada manuscripts which show the earlier stage of the idea and provide a clear link with late antique practise, the setting is completed by a sort of polygonal niche behind the figure, with some distorted reminiscence of real space. The copyist who adapted the idea for use on an ivory book cover no longer understood the spatial implication of the lines converging in quasi-perspective—or perhaps was merely indifferent to what little survived of the three-dimensional tradition in his day, and since he had to fill the lunette above each "niche" with an evangelist symbol, preferred convexity to concavity as a more effective support. For whatever reason, he used the three dimensions of his carving to turn the "niche" inside out, so that what had been its rear wall became the plane nearest the figure of the Evangelist on his throne.

<sup>13</sup> A. Goldschmidt, *Die Elfenbeinskulpturen* i, Berlin, 1918, no. 18, pl. X.

The second addition which transformed a perspective interior into the pseudo-Asia Minor basilica of the Brescia casket, is, of course, its pair of flanking towers. In dealing with these, one must consider the broader problem of the origins of the casket's composition as a whole. It is reasonable to suppose that the unusually complete repertory of scenes from the two Testaments which covers the *Lipsanotheka* was not created for the purpose, but was taken from a prototype in which such a wealth of illustration was more natural, i.e. an illustrated bible, of a sort which we can only imagine today. To include so mature a New Testament cycle, with the events of the Passion carried as far as Christ's trial and the suicide of Judas, such a bible would have had to be of recent manufacture, a product of the fourth century; and so would probably have been a codex generally similar in form to the *Vatican Vergil*, with a framed panel for an illustration at the top of the page. One can readily imagine the composer of a fourth-century New Testament laying out a picture of Christ teaching His apostles. The theme had been a familiar one for generations in the symbolic art of the catacombs; for use in the more literal fourth century it needed a setting, and nothing would have been more natural, in an art which served all religions the same lumpy stew of late antique formulae, than to adapt for the purpose the well-worn room interior.<sup>14</sup> One can visualize the casket's scene perfectly placed in a square panel at the top of a bible page, except for the towers. But if the scene was transferred from a codex to the ivory, it lost its side borders in the process, lost its isolation, faced the danger of losing much of its dignity by too close a juxtaposition to the irrelevant groups on either side. It seems to me quite justifiable to suppose, therefore, that the towers were added by the sculptor as a means of compensation for the lost frame. A tower in fourth-century art had by no means the historic ponderousness and gravity which Strzygowski claimed for it in his *Klein-asiën*. The form had been a stock motive of the academic repertory at least since Pompeii, used with the greatest freedom; on the Brescia casket itself, one of the minor panels is occupied by a single tower, used as a space-filler. One can trace the long tradition of academic architectural design into other early Christian works, notably a catacomb fresco of the Capella Greca; there the tower-like rotunda does not project above all the other portions of the building, but its essential compositional function, as a vertical stop to the long horizontal of the colonnade, is the same as that of the towers on the Brescia casket.<sup>15</sup> Unlike these earlier versions, freely composed in the Hellenistic tradition of asymmetry, the designer of the ivory began with a symmetrical figure group, placed in a symmetrical interior; if he used towers at all, their number could hardly have been anything but two.

<sup>14</sup> In this respect, the casket's iconography, completed in the fourth century, stands in interesting contrast to that of the generally similar scene of Moses' teaching, in mosaic on the nave wall of Sta. Maria Maggiore in Rome. The latter must have been the product of a much older illustrative tradition, reaching back into a Hellenized Jewish art of perhaps pre-Roman date. Richter and Taylor, in their *Golden Age of Classic Christian Art* (London, 1904, pp. 152 ff., pl. 14), suggest that the subject, which corresponds to no biblical text, may possibly be traced back to Philo of Alexandria and his attempts to lend Moses a philosophical importance equal to that of Plato. With so strong a link to the past, it is not surprising that the mosaic scene of teaching should be placed within an outdoor hemicycle, and so should bear a general resemblance to several earlier pagan compositions showing groups of philosophers.

<sup>15</sup> Reproduced in Wilpert, *Fractio Panis*, Freiburg, 1895, pl. IX. The scene is that of Daniel and the lions.

It is perhaps even more likely that the entire setting for the scene of Christ teaching was composed by the casket's sculptor, without immediate reference to an illustrated New Testament. We possess no evidence for the inclusion of such a subject in the pictorial cycle of the early bible; it is neither the illustration of a gospel text nor a typical frontispiece, and in its symbolic character belongs rather to the tradition of the catacombs and apse mosaics. The subject repertory of the casket is obviously heterogeneous, and need not be limited by the scope of the Old and New Testaments alone.

On the other hand, a number of hints in later art, obscure, but I think not meaningless, suggest that this curious composite setting was not limited in its period to the Brescia casket alone; was not created for a single ivory and then forgotten, but began and lasted longest in the more influential field of manuscript illumination, where it may have been used for other purposes. In this respect the Carolingian bible form, standardized in the scriptorium of Tours, is again interesting. The later of the two great illustrated bibles from Tours, that of Count Vivien, includes a frontispiece page lacking in the earlier, which presents the story of Jerome's translation of the Vulgate (fig. 7). Here a second version is furnished by a product of the last Carolingian school, St. Denis, from the last quarter of the ninth century, the elaborate Bible of San Callisto, preserved at San Paolo in Rome (fig. 8).<sup>16</sup> The relationship between the varying architectural settings of these two pages is by no means as clear as that between the Tours Moses pages; the problem of their possible connection with a late antique prototype is correspondingly more complex. Of the three Carolingian bibles here involved, it is the first which is most clearly restricted by a dependence on some original of the fourth or fifth century; each later version is increasingly independent, and surrounds the traditional nucleus with more and more innovations. We cannot be sure, therefore, that the Jerome page as a type goes back to the early Christian period at all; it may have been created at Tours for the Count Vivien Bible at the middle of the ninth century. On the other hand, there is nothing in its design or iconography to prove it a Carolingian creation—as there is, for example, in other Tours pages like the "Majesty." The general relationship between figures and setting is still late antique rather than mediaeval; the composition of the page, in three registers presenting a continuous narrative, is a transitional form still reminiscent of the scroll.

We may suppose, then, that the Count Vivien Jerome page was taken from a fifth-century prototype. The San Paolo manuscript may also have been based on this original, or may have copied its Tours predecessor; or as a third possibility, the relationship may have been complicated by some similar Tours bible, now lost, from which the St. Denis scribe drew his inspiration. If we assume that both existing Jerome pages derive from a common original, we must explain the noticeable variations between them as deviations from that hypothetical standard, lying somewhere between. Viewing the architectural settings of the two pages in the light of this initial prejudice, we shall see that the scene at the upper right, in which Jerome is taught Hebrew in Palestine, has been placed by the St. Denis scribe against a

<sup>16</sup> Best analyzed by P. Durrieu, "Ingobert, un grand calligraphe du IX<sup>e</sup> siècle," in *Mélanges offerts à Emile Chatelain*, Paris, 1910.

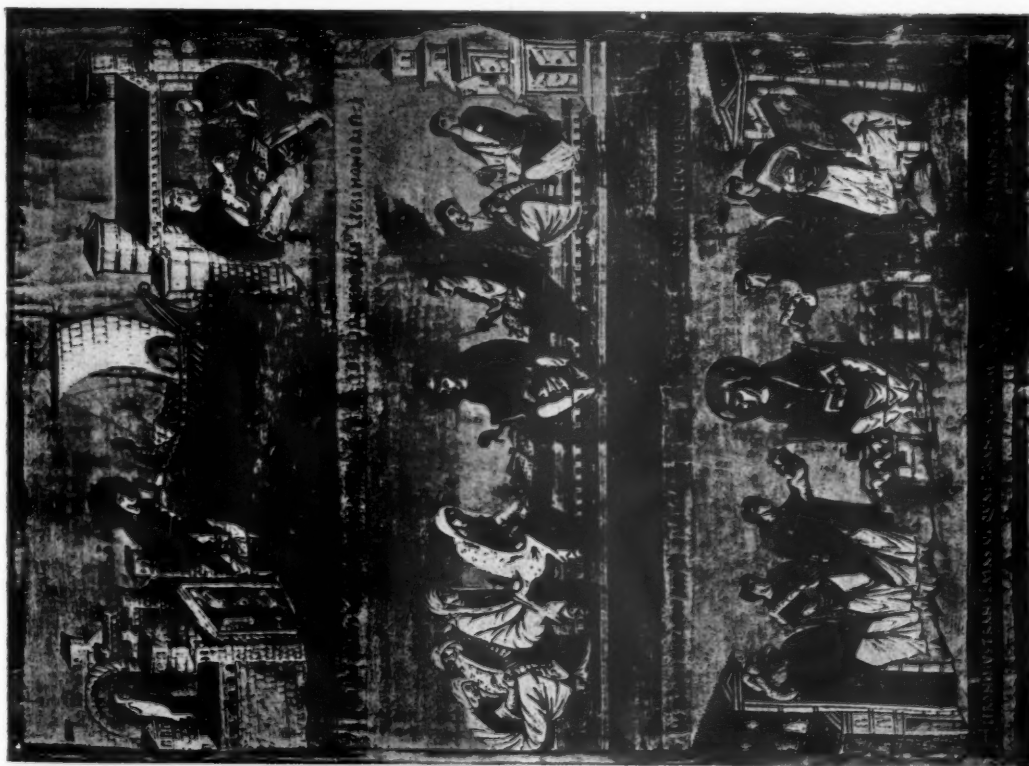


FIG. 7. — PARIS, BIBLIOTHÈQUE NATIONALE, BIBLE OF COUNT VIVIEN, JEROME PAGE



FIG. 8. — ROME, SAN PAOLO, BIBLE OF SAN CALLISTO, JEROME PAGE

thoroughly conventional background, the exterior of a small gabled building set in quasi-perspective (fig. 8). In the Count Vivien version, on the other hand, the two figures sit within a most unconventional building (fig. 7), topped by a lean-to roof and flanked by two towers: towers almost identical with those on the Brescia casket, even to the detail of the two small square windows set in the top storey of each. Turning to the middle register of the page, we shall see that the Tours scribe has set his scene of Jerome teaching the Roman matrons against a mediaeval banded background, without any suggestion of environment, while the later San Paolo version encloses the figure group within a vaulted room, reminiscent of the Brescia setting without its towers. It seems to me not impossible that the lost link between these two pages—presumably a fifth-century original—possessed a composite setting for one or both scenes, which was essentially like that of the Brescia ivory, and that the relationship which it posed between figures, vault, and towers was too complicated for the ninth-century copyists (as was also the perspective room of the Moses scene), so that each altered and simplified it in his own way, one retaining the terminal towers, the other the vault. The theory that the prototype possessed a vault-plus-tower setting may receive some additional support from a further detail, the treatment of the small, conventionalized city of Rome in the upper left corner. On the St. Denis page, this follows the usual formula. On the Tours page, it is given individual interest by the fact that its component parts include not only the usual city wall, towers, gates, and minimal buildings within, but also a relatively colossal statue—presumably the city personified—and its setting. The latter is an arched shrine, standing high above the roofs; what sets it apart from the traditional domed *tempietto* of pagan iconography is the fact that it is placed symmetrically between the towers of the city wall—where all the other elements are jumbled in confusion—and so seems flanked by them. The St. Denis copyist who gave himself too little room, perhaps, for this detail in his Jerome cycle, seems to have been well aware of it, none the less; for in his (apparently) original picture of the Pentecost, he has enclosed the apostles and the Virgin inside an expanded version of the theme: the city wall in bird's-eye view as a frame about the group, and as a background the complex of vault and terminal towers, repeated three times (fig. 9). The vault by this time is the orthodox *tempietto* cupola, so easy to draw in conventionalized form that it survived throughout the Middle Ages; again, it is its combination with symmetrical towers which is exceptional.

The Brescia casket's combination in almost unadulterated form actually appears once again in a post-Carolingian ivory. This is a book cover in the Duke of Cumberland's collection, ascribed by Goldschmidt to the Maas region and to the tenth or eleventh century (fig. 10).<sup>17</sup> The subject is the miracle at Cana. The tradition followed is that of the Liuthard school, associated with St. Denis in the late ninth; I should like to postulate a lost St. Denis manuscript as the immediate prototype, and so link this last version to the chain of transmission already suggested. Goldschmidt associates it with an earlier ivory cover of the Liuthard group, in the British Museum, which in general principles of inscenation is not unlike the Jerome page type. Here the vault-plus-tower building is lacking, I should suppose as a result of deliberate omission.

<sup>17</sup> Goldschmidt, *op. cit.*, i, no. 47, pl. XXII.



FIG. 9. — ROME, SAN PAOLO. BIBLE OF SAN CALLISTO. SCENES OF ASCENSION AND PENTECOST



FIG. 10. — GmundEN, DUKE OF CUMBERLAND COLLECTION. IVORY BOOK COVER

These scraps of evidence suggest that a knowledge of the vault-plus-tower design was transmitted from the early Christian repertory to that of the early mediaeval period; that the formula, being essentially alien to the mediaeval handling of space, was modified or abandoned by these later copyists; and that with the final triumph of mediaeval style it passed out of use entirely.

If the vault-plus-tower design was used in the fourth century to enclose a scene of Christ preaching to His apostles, and in the fifth as a setting for the story of Jerome, it may well have had a still wider application. It may have been a standardized—if infrequent—element in the early Christian repertory of architectural backgrounds, which could be used whenever a combination of interior and exterior views was desired. Its source would still have been the sort of realistic room interior seen in the *Vatican Vergil*, isolated on its own page within a formal border. The composite form would have been created when the scene and setting were taken from their original isolation to form part of a more complex illustrative cycle; so that it became necessary to replace the lost border by equally definite terminal motives.

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## THE TOWER OF THE WINDS AND THE ROMAN MARKET-PLACE

DURING the years 1938 to 1940 I had several occasions to examine the Tower of the Winds and the Roman Market-place in Athens. I hope that it may soon be possible to undertake a more detailed study of these buildings, but pending the resumption of work in Greece, I should like to present some of the conclusions to which my preliminary and rather cursory investigations led.

Perhaps because of its date, and perhaps, also, because of its excellent state of preservation, the Tower of the Winds has not attracted the attention of many archaeologists. Since the time of Stuart and Revett<sup>1</sup> no large-scale, revised drawings of the building have been made, and revision of the Stuart-Revett drawings is

<sup>1</sup> J. Stuart and N. Revett, *The Antiquities of Athens* i, London, 1762, chap. III, pp. 13-25, with pls. I-XIX. The drawings of Richard Dalton (*Athenian Architecture* volume of plates, without text, London, 1751, pls. 15-18), Julien-David LeRoy (*Les Ruines des plus beaux monuments de la Grèce*,<sup>2</sup> Paris, 1770, ii, pl. III) and Abel Blouet (*Expédition scientifique de Morée*, Paris, 1831-1839, iii, pl. 95) are all both inadequate and inaccurate. The plans published by Luigi Canina, *Architettura antica, Sezione II: L'architettura greca descritta e dimostrata coi Monumenti*, Rome, 1834-1841, ii, pls. CXLIV-CXLVI, are merely modifications of those of Stuart. Reduced plans, including a plan and section (by Graef) of the reservoir at the south side of the *Horologion* (Abb. 2369) and a plan (by Dörpfeld) of the constructions adjoining the *Horologion* at south and east (Abb. 2365), are to be found in Baumeister, *Denkmäler des klassischen Altertums* iii, pp. 2112-2115, Abb. 2365-2369 (Abb. 2366-2368 are copied from Stuart). See also J. Durm, *Die Baukunst der Griechen*,<sup>3</sup> Leipzig, 1910, pp. 506-508, Abb. 450-453.

The Tower has fortunately escaped serious damage at the hands of later generations. Both porches have been demolished, although portions of the entablature of the northwest porch are preserved (see note 29); the upper part of the semicircular reservoir has likewise been destroyed. The water-clock, doubtless constructed primarily of bronze, the bronze "gnomons" of the sun-dials, and the bronze Triton weather-vane were probably removed at an early date. At some undeterminable period windows were made in the north and west walls, just below the third interior cornice, by removing in each case a single block from the masonry of the wall. (A window in the south wall, just below the second interior cornice, is original; it opened on the interior of the semicircular reservoir.) An apsidal niche, cut into the southeast wall on the interior, between the first and second cornices, testifies to the use of the building as a Christian chapel. Stuart noted that in his day, when the interior had been partially filled up with rubbish, the Tower was used by Turkish dervishes for their dances. The Turks are to be held responsible for the removal from the roof of the marble finial which had supported the weather-vane and for the substitution in its place of a plaster turban. Leonidas Palaskas proposed in 1845 that modern sun-dials be incised on the southeast and southwest faces of the Tower (Πρακτικά, 1845-1846, p. 269). The Greek Archaeological Society seems never to have adopted this proposal, although Palaskas added, in justification of his suggestion: "Je ne crains pas d'insister sur cette dernière proposition, malgré le reproche banal de vandalisme, que quelques esprits chagrins pourraient me faire. Je ne pense pas qu'on puisse me taxer de manquer au respect dû aux ouvrages de nos glorieux ancêtres, lorsque je propose de tracer un cadran solaire, sur les murs d'un monument de gnomonique, construit exprès pour cet usage, et dans une partie entièrement nette de toute ligne ou détail d'architecture."

"Ces cadrans, tout en étant d'une utilité incontestable pour le service de la vie usuelle, mettraient en outre plus en relief les cadrans anciens, en établissant d'une manière frappante la différence qui existe entre la méthode antique pour diviser le tems (sic), et celle qui est en usage aujourd'hui parmi nous."

Little restoration to the *Horologion* has been necessary. In 1845 and 1846 new bronze "gnomons" for each of the sun-dials were inserted at the suggestion of Palaskas (Πρακτικά, 1845-1846, pp. 234-235; *id.*, 1846-1847, pp. 318-321). In 1919 Orlandos removed the Turkish plaster turban from the roof and set back in place the original marble finial; at the same time the roof was made water-tight by the application of terracotta tiles over the twenty-four vertical joints of the original marble roofing-slabs (Δελτ. 1919, παράρτ., pp. 14-16).

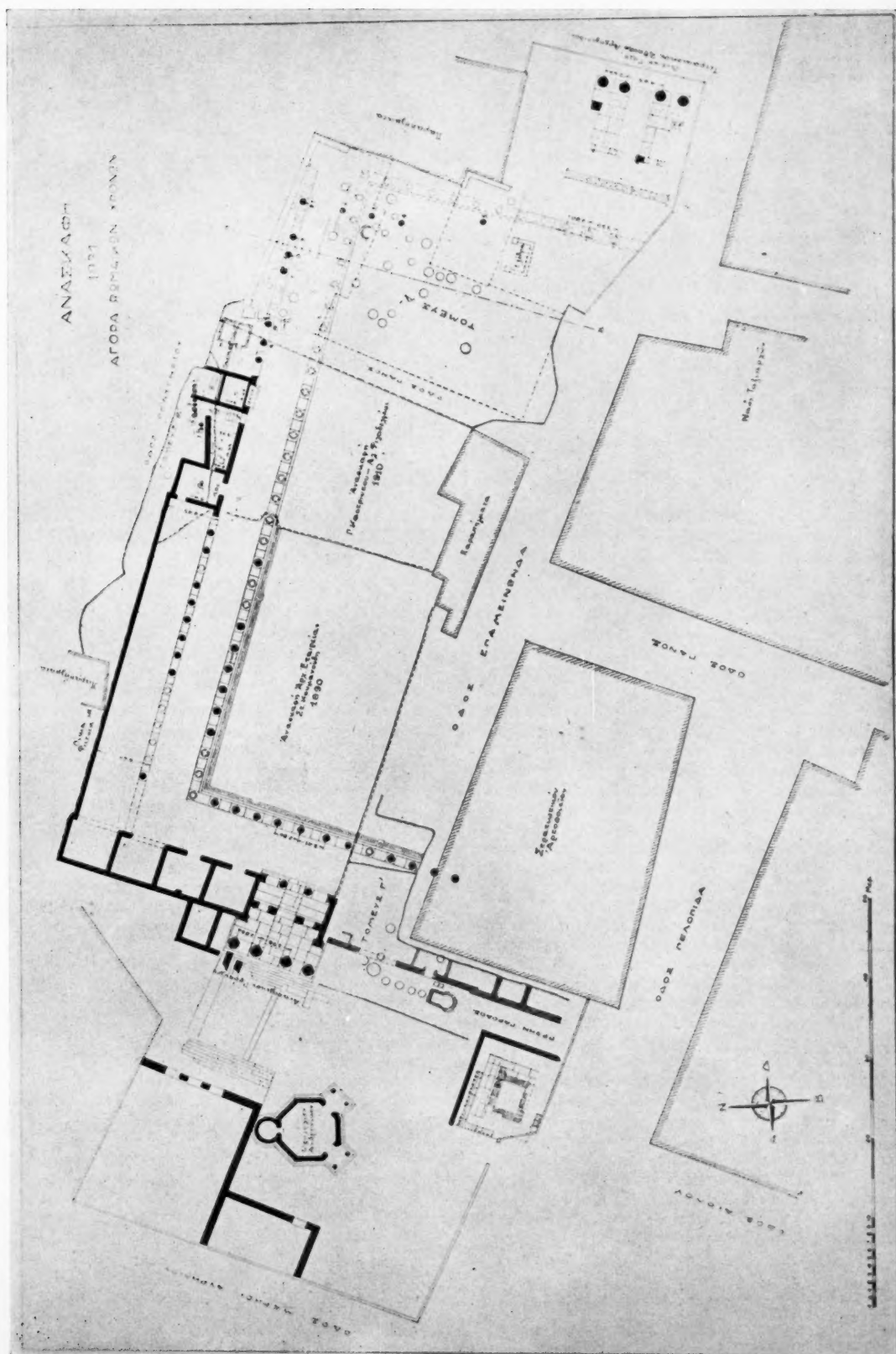


FIG. 1. — PLAN OF THE ROMAN MARKET-PLACE AREA (Δεῦτ. 1930-1931, παράρτ., facing pp. 14-15).

sorely needed. Further, little consideration has been given, except by the late Paul Graindor,<sup>2</sup> to the topographical and chronological relations between the Tower and the other structures of the Roman Market-place area (fig. 1). Although the excavations of the Greeks in this area are not complete,<sup>3</sup> it is yet possible, from a study of the structures which have been exposed, to establish the relative chronology of the buildings. In order to do so, however, one must use the Tower as the starting point; it is the best known and best preserved of the monuments in the area (fig. 2).

The Tower of the Winds, or *Horologion*, as its official title seems to have been, was constructed by a Macedonian astronomer, Andronikos of Kyrrhos;<sup>4</sup> another astronomical instrument made by the same scientist—a multiple-faced marble sundial—has been found in the sanctuary of Poseidon on the island of Tenos.<sup>5</sup> References made to the building by Varro and Vitruvius<sup>6</sup> tell us that it was an octagonal marble tower, with sculptured images of the eight winds on the several faces (fig. 3), and that the roof was surmounted by a bronze weather-vane in the form of a Triton. The passage from Varro's *Res rusticae* suggests that there may also have been an interior weather-vane, "so that," as Varro writes, "one can know the wind-direction from inside." Varro calls the building "horologium"; consequently, there must have been a time-telling device on or in the Tower, although neither Varro nor Vitruvius makes specific mention of such a device. An examination of the building reveals eight sun-dials on the eight exterior faces of the wall, the dials being placed immediately below the sculptured frieze (fig. 3).<sup>7</sup> It is altogether probable, however, that there was a clock on the interior—as there may also have been a weather-vane inside—for use at night or on cloudy days. Such a clock must have been operated by water.

<sup>2</sup> *Musée Belge* xxvi, 1922, pp. 189–192; *id.* xxviii, 1924, pp. 109–121; *Byzantion* iii, 1926, pp. 29–31; *Revue Belge de Philologie et d'Histoire* vi, 1927, pp. 754–756; also *passim* in Graindor's *Athènes sous Auguste*, Cairo, 1927; *Un milliardaire antique: Hérode Atticus*, Cairo, 1930; and *Athènes sous Hadrien*, Cairo, 1934.

<sup>3</sup> For accounts of these intermittent excavations, which began in 1838, see Πρακτικά, 1838–1839, pp. 56–59; 1839–1840, pp. 86–89; 1840–1841, pp. 118–121; 1844–1845, pp. 194–197; 1845–1846, pp. 232–235; 1846–1847, pp. 318–321; 1879, pp. 15–17; 1890, pp. 11–19 and pl. A; 1891, pp. 7–11; 1910, pp. 56–57 and 112–126; 1913, pp. 78–79; 1914, pp. 69–70 and 125. Also Έφ. 1890, col. 141, note 2; Δελτ. 1915, παράρτ., p. 55; *id.*, 1919, παράρτ., pp. 14–16; *id.*, 1930–1931, παράρτ., pp. 1–14, with plan.

<sup>4</sup> Vitruvius i, 6, 4; Varro, *RR.* iii, 5, 17; *IG.* xii, 5, 891 (cf. Graindor, *Byzantion* iii, 1926, p. 30). Varro probably gives the official name of the building when he writes: *ut Athenis, in HOROLOGIO, quod fecit Cyrrhestes*. On the Macedonian town of Kyrrhos, see Thucydides ii, 100, 4 and Steph. Byz. s.v. Μανδραρά.

<sup>5</sup> *IG.* xii, 5, 891. Cf. *Musée Belge* x, 1906, pp. 353–361; *id.* xi, 1907, p. 51 ("additions et corrections"); *id.* xii, 1908, pp. 11–12; *JOAI.*, Beiblatt x, 1907, p. 41; *IG.* xii, Suppl. (1939), p. 139, no. 891.

<sup>6</sup> Cf. note 4.

<sup>7</sup> Stuart published diagrams of the eight dial-faces, of which he wrote: "It is observable that not only the Hours of the Day, but the Solstices also, and the Equinoxes are projected on these Dials; and that the longest as well as the shortest Days, are divided alike into twelve Hours" (Stuart and Revett, *op. cit.* i, chap. III, p. 20). A later study of the dials (on the basis of Stuart's drawings) was made by J. B. Delambre (*Histoire de l'astronomie ancienne* ii, Paris, 1817, pp. 487–503). In 1844 and 1845 Leonidas Palaskas examined the dials carefully from scaffolding erected especially for that purpose. The conclusions of this Greek officer of the French Navy (in which he agrees with the opinion of Stuart quoted above) are set forth in a report to the Greek Archaeological Society (*Mémoire présentée à la Société Archéologique d'Athènes, Le 15 Novembre, 1845*) contained in Πρακτικά for 1845–1846 (pp. 247–286, with plate at end of vol.).



FIG. 2. — THE *Horologion* AND THE SO-CALLED *Agoranomion* FROM THE WEST. THE COLUMN STUMPS IN THE FOREGROUND ARE THOSE OF THE EAST INTERIOR COLONNADE OF THE ROMAN MARKET; THE STEPS BEYOND THE COLUMNS LEAD UP TO THE EAST GATE OF THE MARKET

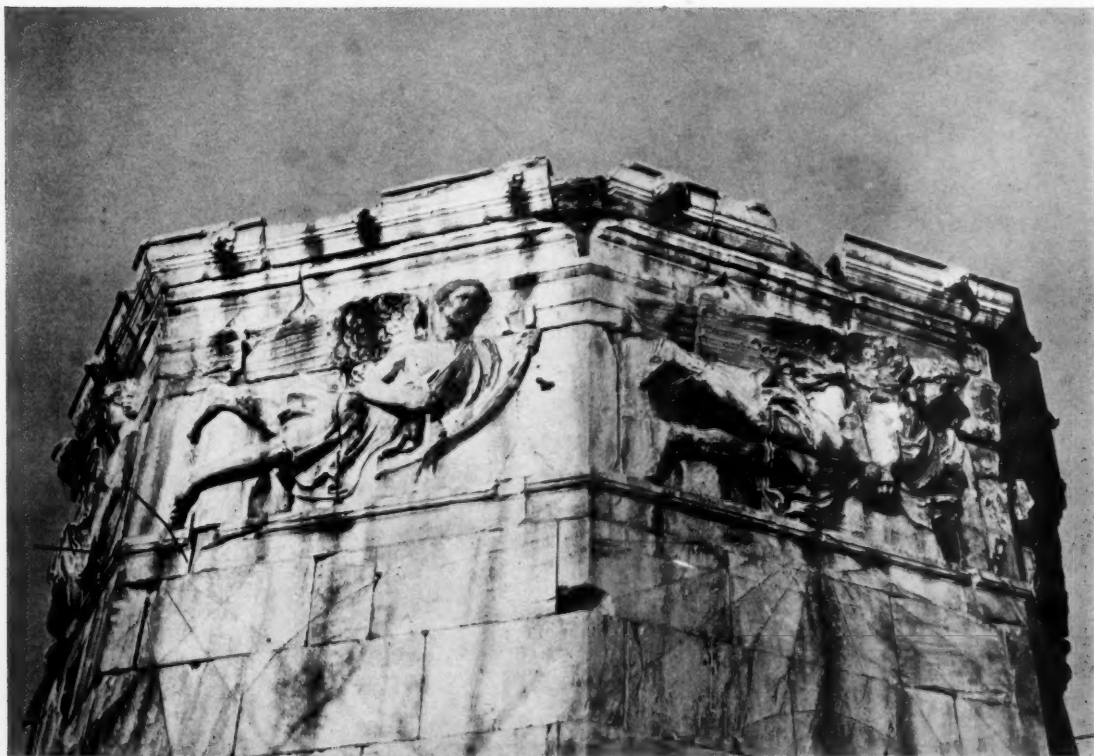


FIG. 3. — DETAIL OF THE EXTERIOR FRIEZE OF THE *Horologion*, SOUTHWEST AND SOUTH FACES

It is interesting in this connection to note the words of Pliny the Elder,<sup>8</sup> who, in his discussion of the time-pieces of Rome, lists those which had been erected down through the year 164 before Christ, when Q. Marcius Philippus set up a "more carefully constructed sun-dial" near the *Rostra*. Pliny then adds: "Yet even then one could not be sure of the time on a cloudy day, and that state of affairs continued until the next *lustrum*. Then Scipio Nasica, the colleague of Lena, divided the hours of both night and day by means of water; he dedicated that *horologium* under a roof in the Year of the City 595 (= 159 before Christ)." The principle of the water-clock was, of course, much older than this date, having been utilized in the κλεψύδρα of the Athenian law-courts<sup>9</sup> and in the remarkable instrument of Ctesibius, of which Vitruvius has left us a description.<sup>10</sup>

We should expect to find some provision for water-supply on the interior of the Tower of the Winds, if such a time-piece had been housed there; and, as is well known, such provision exists in the circular reservoir abutting on the south side of the octagonal building, in the channels (fig. 4, A) and circular cuttings (fig. 4, B) on the floor and in the drain-hole at the center of the floor (fig. 4, C). How these elements served in the operation of the *Horologion*, it is impossible to state, since the mechanism of the clock has long since disappeared.<sup>11</sup>

The Tower of the Winds served as a public time-piece for the city of Athens. Its interior instruments, then, like those in the *horologium* of Scipio Nasica at Rome, should have been accessible to the populace of the city at all times, both night and day. The absence of one cutting on each threshold block and of one on the floor of the Tower indicates that this was the case:

The threshold blocks of both doors are still *in situ*; the cuttings in them are quite distinct and have not been obscured by later alterations of the doors. The original doors were double, consisting of two leaves which opened inward (fig. 4), but it was impossible to close one leaf at a time, as there was no cutting for a metal pin in the center of either threshold to keep the leaf in place. When the door was to be shut, both leaves had to be closed simultaneously and could be held in position only by means of a bar set into hooks on their inside faces. It was certainly not beyond the skill of the Hellenistic locksmith to find a means of locking such a door from the outside, but since the most practical and usual ancient (as well as modern) methods of locking double-doors involve the use of a pin in the sill to hold one leaf in place,<sup>12</sup> I think we may assume that these doors were never locked from the exterior.

Further, there are, on the marble floor of the building, two series of small holes

<sup>8</sup> Pliny, *NH.* vii, 60.

<sup>9</sup> For a recent discussion of an actual κλεψύδρα, discovered in the Agora Excavations, see S. Young, *Hesperia* viii, 1939, pp. 274-284.

<sup>10</sup> Vitruvius ix, 8, 2.

<sup>11</sup> H. W. Inwood (*The Erechtheion at Athens* . . . London, 1827, pp. 122-123 and pl. XIX) suggests that a sculptured frieze rested on the first interior cornice of the building (cf. the proposed reconstruction, *ibid.*, pl. XIX) and served a function in the operation of the clock: "As a figure turned, and with a wand pointed to the band of sculpture round the exterior, representing the winds, perhaps some emblematic figure elevated itself from the pavement, and was turned by the water-dial within, pointing to a somewhat similar band of sculpture, representing the hours of the day in the interior."

<sup>12</sup> Cf. J. Chamonard, *Exploration archéol. de Délos* viii, 2, Paris, 1924, pp. 265-266; D. M. Robinson and J. W. Graham, *Excavations at Olynthus* viii, *The Hellenic House*, Baltimore, 1938, pp. 255-256.

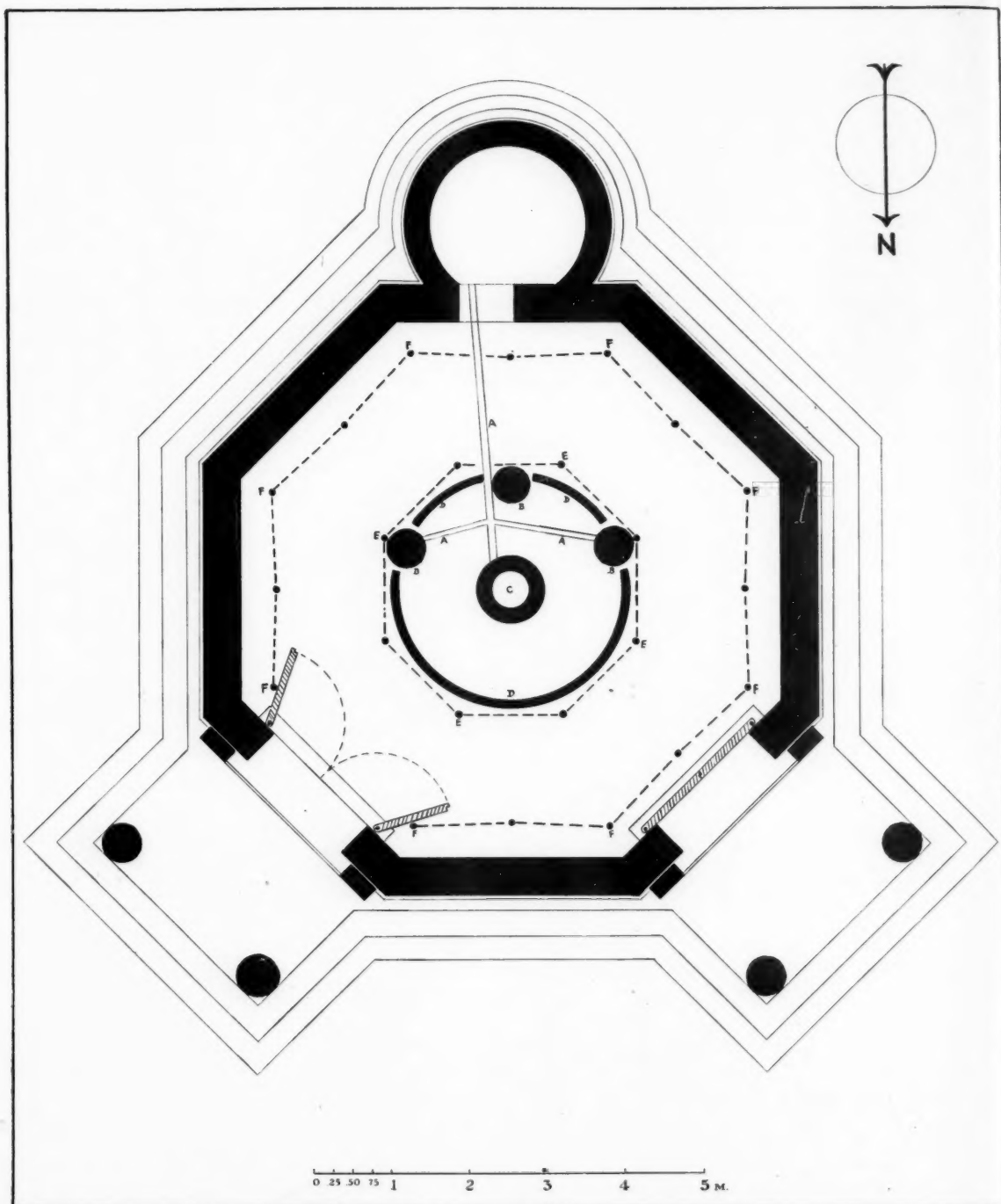


FIG. 4.—FLOOR PLAN OF THE *Horologion*: A=CHANNELS; B=CIRCULAR CUTTINGS; C=DRAIN-HOLE; D=PARAPET-CUTTING; E=OCTAGONAL SERIES OF EIGHT HOLES; F=OCTAGONAL SERIES OF FIFTEEN HOLES

which presumably held metal rods or dowels of some sort. One series consists of eight holes (fig. 4, E). A line connecting these forms an octagonal border around the circular marble parapet (fig. 4, D) which fenced off the mechanism of the clock. The other series consists of fifteen holes (fig. 4, F), placed close to the wall and so disposed that a line connecting them forms an octagon of which each side but that at the northeast is broken at the middle and drawn in slightly toward the center of the building; on the northeast side, *where there is no hole at the middle to correspond with those of the other seven sides*, we must assume that the octagon was incomplete.

The purpose which these two series of holes served is not clear. Perhaps they offered support for bronze foot-rails, or for waist-high fences of posts and chain, as the dotted lines on the plan (fig. 4) indicate. Perhaps the holes served only to hold two groups of unconnected objects. At all events, the presence of a hole in the axis of the northwest door-way, only 46 cm. back from the sill, indicates that from the period when these holes were made, the northwest door was kept closed at all times. There is no such hole on the axis of the northeast door, however, and the threshold of that door shows signs of heavy wear, while traces of wear on the northwest threshold are inconsiderable (even though this is the entrance regularly used by visitors to the building at the present time). It seems certain, therefore, that as long as these two series of holes were utilized<sup>13</sup> there was only one entrance to the *Horologion*, the northeast doorway; and since, as has been pointed out, the doors were probably not locked from the exterior, we may be justified in suggesting that the northeast door was always open and the northwest door (*barred from the inside*) always closed (cf. fig. 4).

The populace of Athens, then, had access to the clock inside the *Horologion* at all hours of the day and night, but it is logical to suppose that a building of this type would have been constructed only in a position where it was readily accessible to large gatherings of people. Most public gatherings occurred in other parts of the city: in the Theatre of Dionysos, on the Pnyx,<sup>14</sup> in the *Heliaea* and other law-courts near the old Agora. But it was in a market-place that the people congregated most regularly, and it was to a large public market that the functions of the *Horologion* would have been most valuable. The construction of the Tower presupposes, I think, the existence of a trading-center near-by.<sup>15</sup> Such a center exists in the so-called Roman Agora (fig. 1), part of which must have been built at the same time as the Tower, if not earlier.

<sup>13</sup> There is no means of ascertaining the date at which these two series of holes were made, but there is no reason for thinking that they were not contemporary with the building as a whole.

<sup>14</sup> It is probable, however, that in the first century B.C. most, if not all, meetings of the assembly took place in the Theatre of Dionysos (Kourouniotes and Thompson, *Hesperia* i, 1932, p. 138).

<sup>15</sup> Graindor (*Athènes sous Auguste*, p. 198) suggests that the designer of the Tower may have had in mind its potential usefulness to merchant-shippers who traded in oil and who needed to know the direction of the winds and the prospects for good sailing-weather (also the time of day). Day (*An Economic History of Athens under Roman Domination*, New York, 1942, p. 132, note 66) calls this suggestion "rather fanciful," but I cannot agree with him. Information on the weather must have been important to the numerous oil-exporters who frequented this market-place (the incision of Hadrian's edict concerning the sale of oil [IG. ii-iii<sup>2</sup>, 1100; cf. note 40] on one of the door-posts of the Gate of Athena Archegetis suggests that the market which this gate served was the principal oil-mart in the city). It is noteworthy, furthermore, that the Tenos sun-dial of Andronikos (cf. note 5) was set up in a sanctuary of Poseidon, where, doubtless, it was frequently consulted by sailors; the base of the dial was decorated with dolphins in relief.

Unfortunately, the date of the Tower is not known. The *terminus ante quem* is given by a reference to the "Horologium at Athens" in Varro's description of his aviary at Casinum. The *Res rusticae*, in which this passage occurs,<sup>16</sup> was written in the year 37 before Christ;<sup>17</sup> but the *Tholus* in Varro's aviary, with which the *Horologium* is compared, must have been built at least seven years earlier, before the dispossession of Varro from his *fundus Casinas* by Antony,<sup>18</sup> and it may be that the year 44 should be taken as the *terminus ante quem* for the Tower in Athens. Architects and historians have assigned dates to the building which range from "near the beginning of the Roman period" down to the decade just preceding the composition of Varro's book.<sup>19</sup> A fragmentary inscription from the Acropolis<sup>20</sup> contains a reference to "the house known as that of the man of Kyrrhos, which the State erected (or repaired)." There is reason to believe that the "house" mentioned is not the *Horologion* itself, but may be an observation post constructed on Mt. Hymettus for the Macedonian astronomer Andronikos, at the time when he was designing the Tower.<sup>21</sup> We cannot, however, further limit the date of the Tower

<sup>16</sup> Varro, *RR.* iii, 5, 8-17.

<sup>17</sup> Varro, *RR.* i, 1, 1 (*annus enim octogesimus admonet me ut sarcinas conligam*); on Varro's birth in 116 before Christ (= Year of Abraham 1901 = Olympiad CLXVI, 1) see Hieronymus, *Chronicon* (Eusebii), p. 147, lines 5-6 (ed. Rudolf Helm, *Eusebius Werke* 7, Leipzig, 1913). Varro's last known trip to Greece was in 47 B.C., when he was with the forces of Pompey (Cicero, *De Div.* i, 32 [68]; Varro, *RR.* i, 4, 5), but he may not then have visited Athens. He had previously attended the lectures in Athens of the Academic philosopher Antiochus of Ascalon (Cicero, *Academica* i, 3). It is not necessary, however, to assume that Varro actually saw the Tower in Athens.

<sup>18</sup> Cicero, *Second Philippic*, 40: It is possible that Antony seized Varro's estate as early as 47 B.C., when Caesar was in Alexandria (*misisse te dicis Alexandriam qui emeret a Caesare*) [cf. Dahlmann, s.v. *M. Terentius Varro* in *RE.* suppl. iii, col. 1178]. Cicero may mean only that in order to provide an excuse for the actual seizure in 44 before Christ, Antony claimed to have bought the estate in 47 and later to have returned it, at Caesar's written request, when Varro was reconciled to the Dictator (*quid, si etiam scripsit ad te Caesar ut redderes*); but, had the existence of such a letter from Caesar been merely claimed by Antony, we might have expected the pluperfect subjunctive form *scripsisset* instead of *scripsit*.

<sup>19</sup> "Near the beginning of the Roman period": E. Curtius, *Die Stadtgeschichte von Athen*, Berlin, 1891, p. 254. (cf. p. 243); ca. 100 before Christ: J. Durm, *op. cit.*, p. 506; Anderson, Spiers and Dinsmoor, *The Architecture of ancient Greece*, New York, 1927, p. 179; in the first quarter of the first century before Christ: *AM.* lvi, 1931, pp. 47-49 (but cf. *CW.* xxvi, 1933, p. 139, note 31); ca. 50 B.C.: D. S. Robertson, *A Handbook of Greek and Roman Architecture*, Cambridge, 1929, p. 338; T. Fyfe, *Hellenistic Architecture*, Cambridge, 1936, p. 56, note 1; between 47 and 37 before Christ: Graindor, *Musée Belge* xxviii, 1924, p. 115; Graindor, *Byzantion* iii, 1926, pp. 30-31; Graindor, *Athènes sous Auguste*, p. 197; Day, *CW.* xxvi, 1933, p. 139 and note 31; Day, *An Economic History of Athens under Roman Domination*, pp. 131-132. Graindor and Day concur in attributing the erection of the Tower to Julius Caesar.

<sup>20</sup> *IG.* ii-iii<sup>2</sup>, 1035, lines 54-55: οἰκίαν τὴν λεγομένην Κυρρήστου ἣν ὁ δῆμος προσκατασκεύασε . . . .]. Day (*Economic History of Athens*, etc., pp. 146-148) and Oliver ("The Sacred Gerusia," *Hesperia*, suppl. vi, 1942, pp. 133-134) now agree in dating this inscription in the Augustan period. For other datings cf. the commentary in *IG.* and the following: P. Graindor, "Chronologie des Archontes Athéniens sous l'Empire," *Mémoires de l'Académie royale de Belgique, Classe des Lettres et des Sciences morales et politiques, deuxième Série* viii, pt. 2, 1922, pp. 142-146; W. B. Dinsmoor, *The Archons of Athens in the Hellenistic Age*, Cambridge, Mass., 1931, p. 294; Day, *CW.* xxvi, 1933, pp. 138-140; W. S. Ferguson, *Hesperia* vii, 1938, p. 17, note 3.

<sup>21</sup> The inscription, from line 4 to the end, has reference to the restoration and purification of sanctuaries and state properties. The monuments or topographical points named seem all to be located outside the walls of the city and are listed in geographical order: bay of Salamis, Piraeus, the slopes of Mt. Hymettus; the reference to the οἰκίαν τὴν λεγομένην Κυρρήστου (line 54) occurs near the end of the document, in the section dealing with Mt. Hymettus. The δῶτυ mentioned in line 57 occurs out of

by means of this inscription, which, according to the most recent investigations by Oliver and Day, should be assigned to the Augustan period. In the present state of our knowledge, it seems impossible to fix the date of the *Horologion* between more accurate limits than those of 100 and 37 before Christ.

Of the construction of the Roman Market-place only one part, the western, Doric gateway of Pentelic marble, dedicated to Athena Archegetis (fig. 5), can be dated with accuracy. The inscription on the architrave of the gate indicates that the construction may have been begun in the lifetime of Julius Caesar (from funds contributed by the Dictator) and that it was dedicated many years later, in the

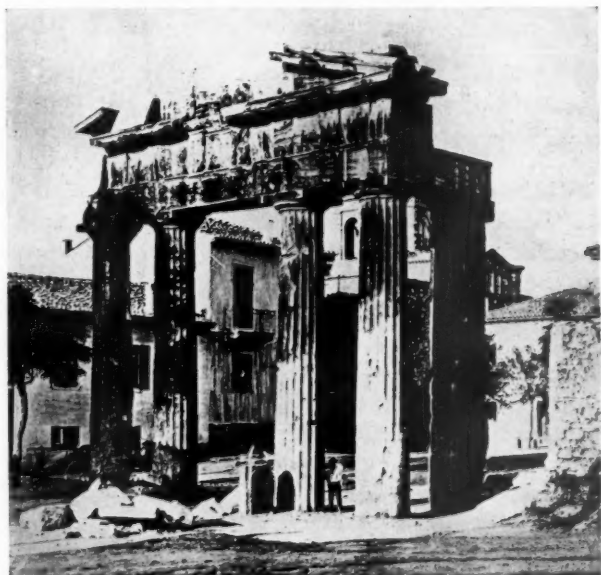


FIG. 5.—GATE OF ATHENA ARCHEGETIS FROM THE SOUTHWEST



FIG. 7.—GATE OF ATHENA ARCHEGETIS, FROM THE SOUTH: A—"WERKZOLL" ON THE EAST END OF THE EPISTYLE BLOCK; B=ROUGHENED VERTICAL SURFACE ON THE SOUTH SIDE OF THE ANTA

order; it is apparently the Ἄστυ of Piraeus: cf. *IG. i<sup>2</sup>, 893*; W. Judeich, *Topographie von Athen<sup>2</sup>*, Munich, 1931, p. 430, insists that Ἄστυ in *IG. i<sup>2</sup>, 893* refers to the city of Athens, but a comparison of the form Μουνιχ(ας), similarly used in *IG. i<sup>2</sup>, 894*, shows that there must have been a section named Ἄστυ in Piraeus (cf. Curtius, *op. cit.*, p. 44). Day, as almost all earlier scholars, assumes that οἰκίαν in this inscription refers to the *Horologion* of Andronikos. Since, however, no other building or topographical point mentioned in the document lies within the walls of the city, but all lie in the areas mentioned above, I feel that it is most probable that the οἰκίαν τὴν λεγομένην Κυρρήστου must be some structure in the Mt. Hymettus region.

It seems obvious that Andronikos must have spent considerable time in Athens preparing his designs: for the plans of the eight sun-dials especially careful observation was required. Cf. the conclusions of Palaskas, who made a study of these dials in 1844 and 1845 (Πρακτικά, 1845–1846, p. 257): "... On est en droit d'en conclure: Que les cadrans de la Tour des Vents, ont été construits pour la ville d'Athènes [*italics mine*], et en parfaite connaissance de cause; et que les anciens connaissaient la latitude de cette ville avec assez de précision."

Mt. Hymettus seems a highly appropriate region for the construction of an observatory for Andronikos.

archonship of Nikias (11/10 or 10/9 before Christ).<sup>22</sup> The central acroterion of the west façade of the gate consisted of a statue, identified by the inscription on its base as that of Augustus' grandson and adopted son, Lucius Caesar (who probably held the title of Caesar from 16 B.C. until his death in 2 A.D.);<sup>23</sup> both statue and inscription are now lost.

Of this gateway only the west, tetrastyle façade (with its entablature, pediment and one anta) and one of the door-posts of the central wall remain standing. The original plan of the gate, however, can readily be restored (fig. 6). Stuart and Revett assumed that the west wall of the Market-place, of which no traces have yet been excavated, joined the gateway on the line of the latter's central partition. Boetticher's excavations in 1862 showed that there were no traces of foundation wall along that line,<sup>24</sup> and an examination of the south side of the gate indicates that the reconstruction of Stuart and Revett is incorrect. The roughened "Werkzoll," or protective ridge, left at the east end of the epistyle block (fig. 7, A) shows that another block joined the epistyle at right angles. Further, the vertical roughened surface on the south face of the anta (fig. 7, B), to which a smoothly finished surface corresponds on the inner (north) face, was not intended to be seen. If Stuart and Revett were correct in their reconstruction, a solid, exposed wall would extend eastward from the anta to the line of the central partition of the gateway and the roughened surface on the exterior of the anta (fig. 7, B) would be visible; likewise, the protective ridge on the epistyle (fig. 7, A) would project from an otherwise unbroken surface extending from the corner column to the line of the central partition wall.

From the construction of this anta we can learn more. None of the blocks of the anta shaft was bonded in either to the wall which extended eastward from it or to the wall which joined it at right angles on the south. The anta capital was bonded in to a slight depth. This anta was, therefore, not an integral part of the whole market building, but was erected independently of—and consequently at a later date than—the Market proper: the Gate of Athena Archegetis was constructed after the market building and perhaps served to elaborate an earlier west gateway of the Market. Bagnani's theory that the gate originally stood independently, like a Roman triumphal arch, over a road-way leading from the old Agora to the *Horologion*,<sup>25</sup> is not only un-Greek in conception, but is also architecturally impossible.

<sup>22</sup> IG. ii-iii<sup>2</sup>, 3175. Cf. Graindor, *Un milliardaire antique: Hérode Atticus*, pp. 6-8; Day, *An Economic History*, etc., pp. 130-131. The dating of Nikias is that of Dinsmoor (*Hesperia* ix, 1940, p. 50, note 114).

<sup>23</sup> IG. ii-iii<sup>2</sup>, 3251. Gaius, elder son of Agrippa and Julia, was adopted by Augustus (and so obtained the title Caesar) in 16 before Christ (Hieronymus, *Chronicon*, p. 166, lines 19-20). Gaius' younger brother, Lucius, born in 17 B.C., was probably adopted at the same time (Suetonius, *Augustus*, 64). Lucius was honored by the erection of a statue as early as 7/6 B.C., four years before he assumed the *toga virilis* (V. Gardthausen, *Augustus und seine Zeit*, Leipzig, 1891-1904, i, 3, p. 1125 and ii, 3, p. 736, 36).

<sup>24</sup> C. Boetticher, *Bericht über die Untersuchungen auf der Akropolis in Frühjahr 1862*, Berlin, 1863, p. 226. For plans and elevations of the gateway, cf. Stuart and Revett, *op. cit.* i, chap. I, pls. I-VI.

<sup>25</sup> *BdA. Ser. II*, i, 1921, p. 532. A gate over a road-way would have been symmetrical in plan. The isolated Propylon at Epidauros was of the same plan on both façades, although one front was executed in the Ionic and the other in the Corinthian order (Cf. Π. Καββαδίας, *Τὸ Ἱερὸν τοῦ Ἀσκληπιοῦ ἐν Ἐπίδουρῳ καὶ ἡ Θεραπεία τῶν Ἀσθενῶν*, Ἀθήναι, 1900, pp. 140-143).

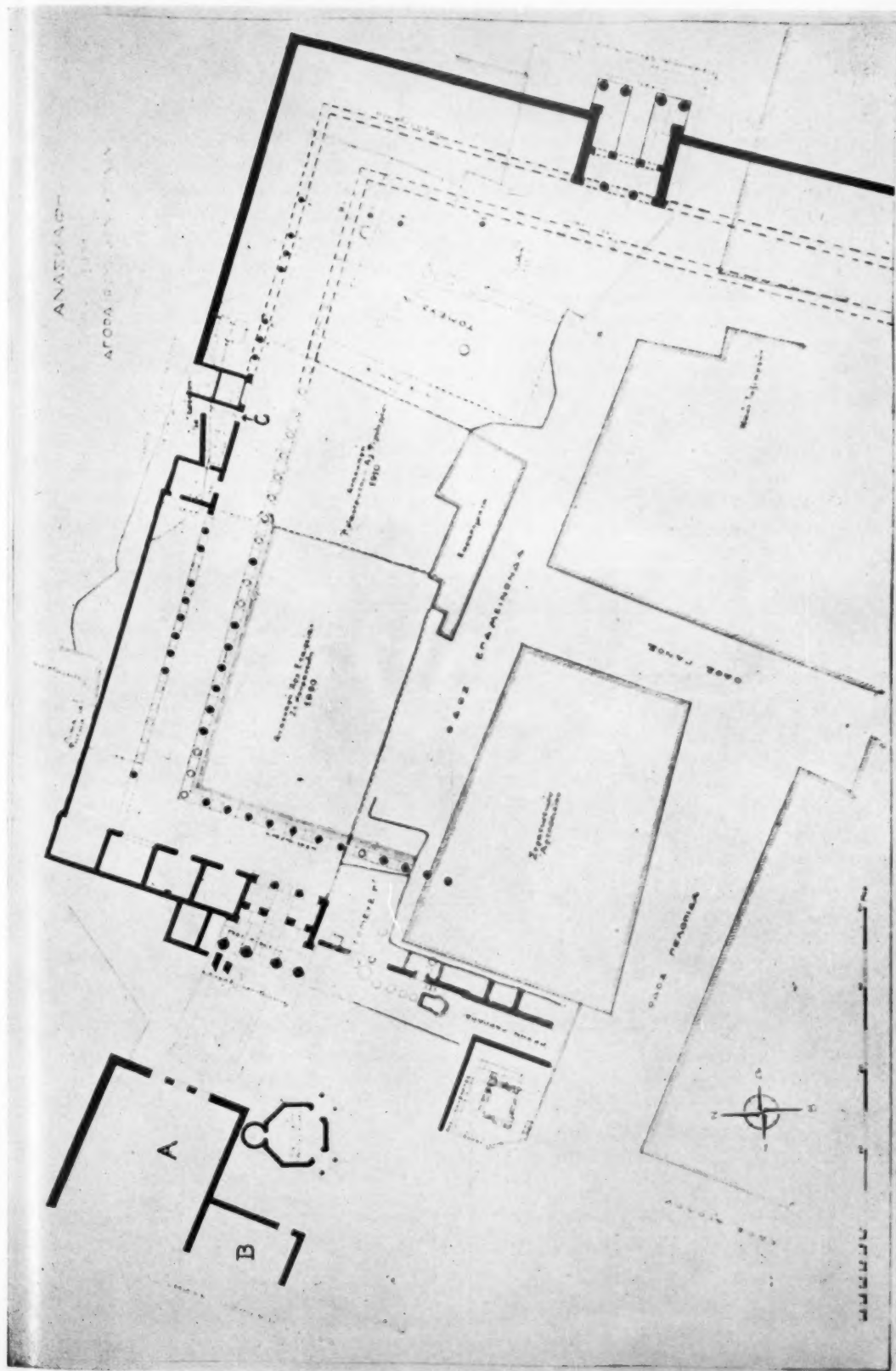


FIG. 6. - PLAN OF THE ROMAN MARKET-PLACE AREA, PARTIALLY RECONSTRUCTED (CF. FIG. 1): A = SO-CALLED AGORANOMION; B = ROOM TO EAST OF HOROLOGION (POSSIBLY THE REAL AGORANOMION); C = STAIRWAY AT SOUTH SIDE OF MARKET

Of the original construction which antedates this marble propylon very little is preserved. At the south, where the ancient ground level was much higher than in the court of the Agora, the retaining wall of the Market is built of poros stone; that there was a second story to the arcade is suggested by the stairway near the center of the south colonnade (fig. 6, C). The entrance to the Market from the south must have been at the second-story level. Built into some of the late reconstructions of the Agora are numerous fragments of a Doric frieze of poros stone. This frieze, if it belonged to the original Market building,<sup>26</sup> may have been placed above one of the interior orders of columns, but it seems more likely that it crowned the exterior wall. In all probability, the entire quadrangular outer wall of the Market was originally of poros. The contemporary interior columns may have been of wood or poros.

The date of this original construction cannot be fixed. It must be at least as early as the Tower of the Winds (cf. p. 297) and earlier than the Gate of Athena, although it need have preceded the Gate by only a few years or even months. The Gate of Athena cannot be placed before 47 B.C., the earliest probable date at which Julius Caesar could have made his gift to the city.<sup>27</sup> Although there is not sufficient evidence to give the correct date for the Tower, I should favor the later dating—in the second half of the first century—which would make its construction roughly contemporary with the initial gift from Caesar.<sup>28</sup>

There is much probability in the view held by Graindor and Day that both the Market-place and the Tower of the Winds were planned and financed by Julius Caesar, but that the work on the Market progressed so slowly that its completion could only be effected in 11/10 or 10/9 through the acquisition of additional funds from Augustus.<sup>29</sup> The *Horologion*, however, was completed by 37 B.C. (Varro would hardly refer to an incomplete building for comparison with his *tholus* at Casinum), and one wonders why the work on the Market should have been so delayed, if it and the Tower were financed by the same individual. Surely the Tower would not have been the first structure to be erected in carrying out a building program, the principal aim of which was to provide the city of Athens with a new Market-place.

<sup>26</sup> Dinsmoor tells me that he believes this frieze is contemporary with the poros frieze of the Stoa of Zeus in the old Agora, which is dated in the last 30 years of the fifth century B.C. (*Hesperia* vi, 1937, pp. 53, 73).

<sup>27</sup> For references, see note 22.

<sup>28</sup> So also Graindor: *Musée Belge* xxviii, 1924, p. 115; *Byzantion* iii, 1926, p. 30; *Athènes sous Auguste*, p. 197. Graindor, however, believes that the entire Market—east and west gates and interior colonnades included—was built at one period, between 47 B.C. and 2 A.D.

<sup>29</sup> Graindor, *Athènes sous Auguste*, p. 197; Day, *An Economic History* etc., p. 132. Day modifies Graindor's views to the extent of asserting that the people of Athens financed the building of the *Horologion*, but this belief rests on the double assumption that the οἰκίαν τὴν λεγομένην Κυρρήστου of IG. ii-iii<sup>2</sup>, 1035 is identical with the *Horologion* and that the word προσκατασκε[ύασσε] of the same inscription means "build" rather than (as some of the editors have thought) "repair" (cf. notes 20 and 21).

One would expect either Varro or Vitruvius, in view of their respective political affiliations, to have made some mention of the fact, had Caesar either planned or financed the *Horologion*. The dedicatory inscription which would have furnished information about the construction of the building was probably incised on the architrave of the northeast porch—the main entrance to the Tower: cf. p. 297. The fragments of architrave, frieze, and pediment which have been grouped together near the northwest porch by the Greek excavators are uninscribed and probably belonged to the northwest porch.

I am inclined to believe that a permanent market-building stood on this site before the erection of the Tower of the Winds and that Julius Caesar's program, involving only certain embellishments to an already existing Market, was completed in the time of Augustus by the addition to the Market-place of the Gate of Athena Archegetis.<sup>30</sup>

The east gateway of the Roman Market-place and all the interior columns may be of a later period than any of the constructions so far mentioned, but that the east gate and the interior columns are mutually contemporary is shown by the correspondence of the profiles of the column bases and of the materials used in both: the unfluted column-shafts of Hymettus marble rest on Ionic bases of Pentelic. The capitals of the columns of the east gate are not preserved *in situ*, but two of the capitals of the interior colonnade, together with their epistyle, are in place. Both capitals and epistyle are of the Ionic order, executed in Pentelic marble.

The eastern gateway is similar in plan to the Gate of Athena, but smaller. Its central axis does not lie at right angles to the east wall of the Market, but is oriented rather in relation to the façade of a building which has generally been identified as the *Agoranomion*, or Office of the Market Police (fig. 6, A). Of the latter building little is preserved but the deep poros foundations and three marble door-frames with arcuated lintels (fig. 2, at right, in background).<sup>31</sup> The thresholds of these doorways lay at a considerably higher level than the floor of the east gate of the Market. A broad flight of steps, much rebuilt in Mediaeval times, led down from them to the level of the stylobate of the gate.

The preserved superstructure of this "*Agoranomion*" is built largely of the same grade of Hymettus marble that was used in the east market-gate and the interior colonnades. The capitals, on which the arcuated lintel blocks rest, and the entablature are of Pentelic marble. An inscription incised on this entablature course, part of which is still in place above the lintels, records that the building was dedicated by two Attic demesmen to Athena Archegetis and the Θεοὶ Σεβαστοί.<sup>32</sup> Inasmuch

<sup>30</sup> Dinsmoor (*Hesperia* ix, 1940, pp. 50-52) believes that the fifth-century temple of Ares was originally erected in the area later occupied by the Roman Agora: "Around [the Temple of Ares] were probably begun, soon after 47 B.C., the initial stages of the erection of the Roman Agora. The actual demolition and transfer of the Temple of Ares may have been postponed until the securing of new funds from Augustus, . . . For the new site was chosen, between 15 and 10 B.C., an area beside the recently completed Agrippaion, in the open center of the [old] Agora . . ." (*id.* p. 51). It seems improbable, however, that after the construction and completion of the Tower of the Winds (by 37 B.C.) the area to the west of the Tower was left for twenty years or more in a half-completed state, while the Temple of Ares remained standing within the walls of a Market which had been built part way around it. Surely it would have been logical to move the temple first and then start building the Market-place. Is it possible that the area north of the Roman Agora, later occupied by the Library of Hadrian, was the original site of the Temple of Ares?

<sup>31</sup> For details of construction, see Stuart and Revett, *op. cit.* iii, chap. XII, pl. I; Durm, *op. cit.*, p. 505, Abb. 449.

<sup>32</sup> *IG.* ii-iii<sup>2</sup>, 3183. Graindor (*Athènes sous Auguste*, p. 196, note 2) doubts that these three inscribed entablature blocks belong to the façade on which one of them (frag. b of the inscription) now rests; but the material of this entablature corresponds with that of the capitals under the lintels, and its dimensions are appropriate to those of the lintel blocks: width of top surface of lintel, 0.63 m.; width of soffit of entablature, 0.61 m. (cf. Graindor, *Athènes sous Auguste*, p. 196, note 2; the editor of the inscription in *IG.* gives 0.56 m. as the width of the entablature, but this does not correspond with my measurements—the discrepancy has been noted only since my return from Greece and I have not been able to

as the cult of the *Divi Augusti*, or Θεοὶ Σεβαστοί, cannot antedate the consecration of Livia in the second year of the reign of Claudius,<sup>33</sup> this building cannot be dated earlier than 42 A.D. and may be considerably later than that year.<sup>34</sup>

A Greek inscription on another arcuated lintel block of Hymettus marble, found in the vicinity, reads: "The Senate of the Five Hundred dedicated the *Agoranomion* to the Emperor T. Aelius Hadrianus Antoninus Pius; Antipatros, son of Musaios, of Alopeke, and Leukios, son of Leukios, of Marathon, were *Agoranomoi*." <sup>35</sup> This lintel, then, was set up in the period 138 to 161 A.D. Graindor believes that it was a part of the building, of the façade of which the three door-frames are still in place (fig. 6, A), and that that building was consequently the *Agoranomion*.<sup>36</sup> The lintel, however, which bears the dedication to Antoninus Pius was not found *in situ*; it is of smaller dimensions than those which remain standing, and if it belonged to this building, it would have to be assigned either to a second story of the west façade—at which height the lettering of the inscription would have been illegible—or to one of the other three walls. Further, the rosettes in the spandrels of the three large lintels are of a different type from those of this small one, and it therefore seems likely that the small lintel belongs to another building in the same area, possibly to the room which lies to the east of the *Horologion* (fig. 6, B).

The *Agoranomion*, to which this small lintel block belongs, is of the mid-second century after Christ. The building with the three standing door-frames (fig. 6, A) is certainly not earlier than 42 A.D. and is probably to be considered close in date to the *Agoranomion*, in view of the marble and the type of doorway (with arcuated lintel) used in both. The chronological relations between these two second-century buildings and the interior colonnades and east gate of the Market-place are not clear. That the latter, built in the Ionic order of Hymettus and Pentelic marble, are of the same date as the west Doric gate of Pentelic, is unlikely; that they are con-

verify the figures). Frag. a of the inscription was reproduced by Stuart and Revett, *op. cit.* i, vignette at head of preface, p. i. Part of the inscription was *in situ* in Stuart's time (*id.* iii, chap. XII, p. 63). In 1825 the editor (W. Kinnard) of the *New Edition* of Stuart and Revett wrote: "It is to be regretted that Stuart did not preserve a copy of the inscription he speaks of in the frieze of this building, as it has since either been removed or obliterated, for on a very careful inspection, we did not observe any which could have belonged to the original edifice" (Stuart and Revett, *The Antiquities of Athens, New Edition*, London, 1825, iii, pp. 113–114, note b); but in 1835 fragment b of the inscription was observed *in situ* above the lintels (K. S. Pittakys, *L'ancienne Athènes*, Athens, 1835, p. 126; cf. also E. Breton, *Athènes décrite et dessinée*, Paris, 1862, p. 257), where it remains to this day. One is, I think, justified in suspecting the carefulness of Kinnard's observations and in believing that fragment b of the inscription was *in situ* above the lintels in the time of Stuart and Revett and that it has remained there undisturbed until the present time; that the inscribed entablature does not belong to the arched façade, then, seems unlikely.

<sup>33</sup> Taylor and West first pointed out that the *terminus post quem* for the cult of the Θεοὶ Σεβαστοί is the deification of Livia (*AJA.* xxx, 1926, p. 395 and note 3). Livia was consecrated on January 17th (*CIL.* vi, 2032, lines 15–17). It is likely that this honor was conferred by Claudius on his grandmother early in his reign (Dio Cassius lx, 5, 2; Suetonius, *Claudius* xi, 2); but since Claudius' accession did not occur until January 25th of the year 41, the consecration of Livia must be dated in 42 or later. The year 42 is generally accepted: K. Vivell, *Chronolog.-krit. Untersuch. zur Gesch. des Kaisers Claudius* (Diss., Heidelberg; Freiburg, 1911), pp. 70 and 83; Gahéis, s.v. *Claudius* (256) in *RE.* iii, col. 2788; Gaetano Marini, *Gli Atti e Monumenti de' Fratelli Arvali, Parte Prima*, Rome, 1795, p. 78.

<sup>34</sup> The poros foundations may antedate the arched doorways of Hymettus marble, as Graindor pointed out (*Musée Belge* xxviii, 1924, pp. 119–120).

<sup>35</sup> *IG.* ii–iii<sup>2</sup>, 3391. Cf. Graindor, *Revue Belge de Phil. et d'Hist.* vi, 1927, pp. 754–756.

<sup>36</sup> Graindor, *Athènes sous Auguste*, p. 196, notes 2 and 4.

temporary with the *Agoranomion* and the building dedicated to the Θεοὶ Σεβαστοὶ is made highly probable by the appearance in each group of buildings of both Hymettus and Pentelic marbles.

The Roman Agora has not yet been fully excavated by the Greek Archaeological Society, but it is quite likely that the building was of symmetrical plan and that the Gate of Athena lies on its east-west axis.<sup>37</sup> The reconstruction of the building around this axis suggests an interior colonnade which has the same number of columns—one hundred—and almost the same dimensions as that of Hadrian's Library. Now Pausanias, in his Ἀττικὰ, after describing the Library of Hadrian, continues: "and there is a gymnasium which bears the name of Hadrian; the columns there are one hundred in number, from the quarries of the Libyans."<sup>38</sup> It is tempting to suggest, as Bagnani has done,<sup>39</sup> that this "gymnasium" is identical with the Roman Agora; but the marble of the colonnade of the Agora is from native Attic quarries, and it is quite impossible that the building can have served as a gymnasium, as Bagnani claims. That Hadrian, however, interested himself to a certain extent in the commercial activities of the Market-place is shown by his imperial edict restricting the sale of oil, which was incised on one of the door-jambs of the Gate of Athena Archegetis.<sup>40</sup> Moreover, the passage in which Pausanias describes the Library and Gymnasium of Hadrian is parenthetic, inserted after the description of the *Olympieion* to provide a summary of Hadrian's benefactions to the city of Athens. It may well be that many of the monuments here enumerated were not actually seen by the periegete, and that he knew of them only through the inscription in the *Pantheon* which recorded the Emperor's gifts. If this were the case, some error in the identification of the function and material of the Market-place might well have found its way into Pausanias' text.<sup>41</sup>

To summarize, then, the history of the building operations in this area is as follows: in late Hellenistic or early Roman times a large rectangular Market-place was constructed in poros stone; in the second half of the first century B.C. the *Horologion* of Andronikos was constructed to the east, and somewhat later in the same century a monumental Doric propylon of Pentelic marble, the Gate of Athena Archegetis, was added to the west wall of the Market; in the second century A.D., possibly in Hadrianic times, the Market was provided with interior colonnades and an eastern propylon of Hymettus (with some Pentelic) marble, and a building with arched façade was set up south of the *Horologion*; during the reign of Antoninus Pius the *Agoranomion* was constructed somewhere in the neighborhood of these other constructions; at an even later date the court of the Market-place was paved with marble.

For the history of the area in Byzantine and Turkish times we must await the completion of the excavation of the Market and the full publication of the reports of the Greek excavators.

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<sup>37</sup> Judeich (*op. cit.*, p. 372 and Plan I [F 4-5]; cf. also Curtius, *op. cit.*, p. 256) gives a reconstruction of the Market, but he does not accurately indicate the number of columns in the interior colonnade.

<sup>38</sup> Pausanias i, 18, 9.

<sup>39</sup> *BdA. Ser. II*, i, 1921, p. 533.

<sup>40</sup> *IG*, ii-iii<sup>2</sup>, 1100. Cf. Graindor, *Athènes sous Hadrien*, pp. 74-79.

<sup>41</sup> Cf. W. Gurlitt, *Über Pausanias*, Graz, 1890, pp. 275-277. For the inscription ἐν τῷ κοινῷ τῶν θεῶν ἱερῷ cf. Pausanias i, 5, 5.

## ON LIVY XXXVI, 40 (BOIIAN SILVER)

LIVY reports on the triumph of P. Cornelius Nasica over the Boii in 191 B.C. as follows. *In eo triumpho Gallicis carpentis arma signaque et spolia omnis generis traxerit et vasa aenea Gallica et cum captivis nobilibus equorum quoque captorum gregem traduxit. aureos torques transtulit mille quadringentos septuaginta unum, ad hoc auri pondo ducenta quadraginta septem, argenti infecti factique in Gallicis vasis non infabre suo modo factis duo milia trecenta quadraginta pondo, bigatorum nummorum ducenta triginta quattuor.*

In the triumph were to be seen: (1) *Carpenta*, Gaulish two-wheeled battle-chariots, laden with weapons, ensigns and spolia of every kind. There was much the same shown<sup>1</sup> in 197 B.C. in the triumph of C. Cornelius Cethegus over the Insubres and Cenomani,<sup>2</sup> and in the same year in Q. Minucius Rufus' triumph in Monte Albano over the Ligures and Boii;<sup>3</sup> in 196 B.C. in the triumph of M. Claudius Marcellus over the Insubres and Comenses,<sup>4</sup> and in 187 B.C. in the triumph of Cn. Manlius Vulso over the Gauls in Asia Minor.<sup>5</sup> In this last triumph the chariots and their loads appear at the end of the Livian list; in all the others at the head of it, which is rather a matter of redaction than of order and appearance of the triumph itself. (2) Gaulish chieftains and horses. There is no mention of horses in the other Gaulish triumphs: the horses were worth seeing and roused curiosity because of their caparison.<sup>6</sup> (3) Gold. (a) 1471 torques—not occurring in the lists of other triumphs over Gauls. (b) 247 lbs. (80.88 kilos) bullion. (4) Silver. (a) *infectum*, i.e. bullion. (b) *factum*, i.e. manufactured into vases, ornaments and the like. (a) and (b) together had a weight of 2340 lbs. (766.2 kilos). (c) *signatum*—the term is not used here, but is frequent in the lists<sup>7</sup>—234,000 *denarii bigati*.

Notice that gold and silver alone appear with numbers (or weight): in his narrative of the victory itself, in xxxvi, 38, 6, Livy, though with due reserve and criticism,<sup>8</sup> gives Valerius Antias' imaginary figures: 3400 prisoners, 124 *signa*, 247 *carpenta*, 1230 horses. There is the same difference between the account, with Valerian figures (87 *signa*, 732 *carpenta*), of M. Claudius Marcellus' victory in 196 B.C. (xxxiii, 36, 13) and the report on the triumph (xxxiii, 37, 10). In the descriptions of triumphs Livy,

<sup>1</sup> There is a handy collection of the material in Pais, *Fasti Triumphales*; another in Tenney Frank, *An Economic Survey of Ancient Rome*, pp. 126 ff. I am greatly indebted to Professors J. D. Beazley, E. D. M. Fraenkel, F. Jacoby, H. T. Wade-Gery and Dr. S. Weinstock, who have discussed points with me.

<sup>2</sup> Livy xxxiii, 23, 4–6 *multa signa militaria tulit, multa Gallica spolia captivis carpentis transverit, multi nobiles Galli ante currum ducti, inter quos quidam Hamilcarem, ducem Poenorum, fuisse auctores sunt; ceterum magis in se convertit oculos Cremonensium Piacentinorumque colonorum turba pilleatorum currum sequentium.*

<sup>3</sup> Livy xxxiii, 23, 8 (*triumphum C. Cornelii*) *signis carpentisque et spoliis ferme aequabat.*

<sup>4</sup> Livy xxxiii, 37, 10 *multa spolia hostium captivis carpentis travecta, multa militaria signa.*

<sup>5</sup> Livy xxxix, 7, 1 *et arma spoliaque multa Gallica carpentis travecta, duces hostium duo et quinquaginta ducti ante currum.*

<sup>6</sup> See below.

<sup>7</sup> Livy xxvi, 47, 7; xxxiii, 27, 1; xxxiv, 10, 4; xxxiv, 52, 4; xxxvii, 46, 2; xl, 43, 5.

<sup>8</sup> See also xxvi, 49, 3; xxx, 19, 11; xxxiii, 10, 8; xxxvi, 19, 12.

as a rule, refrains from giving figures for booty other than gold and silver: an exception is found in xxxvii, 59, 3, where the Valerian numbers of ensigns, statues of towns and elephant tusks have crept into the otherwise sober list.

I have purposely not yet commented on the words *et vasa aenea Gallica*. There is another mention of bronze vases in a triumph, that of T. Quinctius Flaminius after his victory over Philip (Livy xxxiv, 52, 4): *Triduum triumphavit. die primo arma, tela signaque aerea et marmorea transtulit, plura Philippo adempta, quam quae ex civitatibus ceperat; secundo aurum argentumque factum infectumque et signatum. infecti argenti fuit quadraginta tria milia pondo et ducenta septuaginta, facti vasa multa omnis generis, caelata pleraque, quaedam eximiae artis; et ex aere multa fabre facta; ad hoc clipea argentea decem. signati. . . . auri . . . tertio die coronae aureae, dona civitatum, tralatae centum quattuordecim; et hostiae ductae et ante currum multi nobiles captivi obsidesque . . .*

Here the bronze vases interrupt the otherwise systematically arranged list of silver: they are appended to other decorated vases, irrespective of material. In our passage the bronze vases are the last item in a list of objects carried in *carpenta*. The enumeration is loose, but not slovenly: first the weapons and ensigns, then other booty, of which, by their position after the verb, the bronze vases are singled out; quite likely they were not mixed up with the weapons, but laid out on separate carriages.<sup>9</sup>

Livy's reports on triumphs, on the whole, are fairly well disposed lists of items and figures, based on the accounts of the *aerarium*.<sup>10</sup> Livy made little attempt to transform the raw material into a picture of a triumph. The verbs of movement and marching are aptly chosen; here and there we see soldiers walking behind the *triumphator* in his chariot; *signa* and *spolia* preceding him, prisoners preceding or following him;<sup>11</sup> in the Boian triumph the *carpenta*, some laden with weapons, others with bronze vessels and other booty, at the head of the triumphal procession. In descriptions of triumphs extending over several days, such as that of Quinctius Flaminius, we are told which objects were carried on each day.<sup>12</sup> All this is modest enough and remote from a real picture of a triumph like Polybius' report on the triumph of Aemilius Paulus over Perseus in 167 B.C. (Plutarch; *Aemilius Paulus* xxxii-iii).<sup>13</sup> Yet one cannot doubt that Livy, beside the documents of the *aerarium* used, had at his disposal material of other kinds, giving facts of the triumphs themselves.<sup>14</sup>

<sup>9</sup> Against the view held by two competent friends of mine, namely that the words *et vasa aenea Gallica* are a marginal note, either by Livy himself or by a learned reader, which at some time crept into the text, I keep the traditional reading.

<sup>10</sup> See the locus classicus Cicero, *In Verrem* i, 21, 57; Mommsen, *Staatsrecht* ii, 551; Tenney Frank, *op. cit.*, p. 127.

<sup>11</sup> E.g. iii, 29, 4; xxxi, 49, 3; xxxiii, 23, 5-6; xxxvii, 59, 5; xxxix, 7, 1; xl, 38, 8.

<sup>12</sup> See below.

<sup>13</sup> For the reconstruction of the Polybian original one has to rely on Plutarch, who is true in style, not entirely complete in facts. Synkellos, in his excerpt of Diodorus (in the editions xxxi, 8), quite apart from the deprecation of diction, distorts facts: the program of the three days is at variance with Plutarch, who deserves credence here as well as in the description of the carriages with the weapons (see below). On the other hand, there are a few trifling details which complete Plutarch's report.

<sup>14</sup> Dr. Weinstock draws my attention to Pliny, *NH.* xxxvii, 13: *verba ex ipsius Pompei triumphorum actis subiciam.*

There still remain to be interpreted the words in *Gallicis vasis non infabre suo modo factis*. Weissenborn connected them with the words preceding *argenti infecti factique*, and understood "silver manufactured into vases." His interpretation is disproved by the following facts of grammar and style: *argentum infectum factumque* is a fixed formula (probably coined by bankers and treasurers): if either component or both are to be specified, they have to be repeated, as in Livy's report of the triumph over Philip just quoted. *Facti—factis* is a most awkward expression. *Facere in cum abl.* = *manufacture into* is without analogy, and the Livian examples quoted by Weissenborn<sup>15</sup> are not comparable. *In vasis* can only mean that something was carried in them: as the text runs, *argentum infectum factumque*. Now it would have been absurd to shove into containers *argentum factum*, decorated vases and the like, instead of displaying them to the eyes of the public; but it was customary in Egypt, Persia and Greece to store coins in pots.<sup>15a</sup> The Delian treasury lists mention stamnoi containing coins.<sup>15b</sup> The shape of these receptacles cannot be established, for we do not know which vase the Greeks called στάμνος.<sup>15c</sup> In Athens, hydriae were used for the purpose. This is shown by the relief crowning a stele with a φόρος decree of 426/5 B.C. (second prytany): *IG.* 2 65; Wilhelm, *Urkunden des attischen Reiches* (Anz. phil.-hist. Kl. K. Akademie der Wiss. Wien, 1909, no. X), plate facing p. 54; A. Hess, *op. cit.*, pl. 1; Meritt, *Documents on Athenian Tribute* p. 4, fig. 1;<sup>15d</sup> Binneboessel, *Studien zu den attischen Urkundenreliefs*, no. 4.

In the triumph of Aemilius Paulus, silver and gold coins were carried *in vasis*: Plutarch, *Aemilius Paulus* xxxii, 8: μετὰ δὲ τὰς ὀπλοφόρους ἀμάξας ἄνδρες ἐπεπορεύοντο τρισχίλιοι, νόμισμα φέροντες ἀργυροῦν ἐν ἀγγείοις ἑπτακοσίοις πεντήκοντα τριτάλ-  
αντοῖς, ὧν ἕκαστον ἀνὰ τέσσαρες ἐκόμιζον. *ib.* xxxiii, 3 εἶτα μετὰ τούτους οἱ τὸ χρυσοῦν νόμισμα φέροντες, εἰς ἀγγεία τριτάλαντια μεμερισμένον ὁμοίως τῷ ἀργύρῳ. τὸ δὲ πλῆθος τῶν ἀγγείων ὀγδοήκοντα τριῶν δέοντα.

The obvious remedy for our corrupted passage is to remove the words in question from their present place and to read: *argenti infecti factique duo milia trecenta quadraginta pondo, bigatorum nummorum in Gallicis vasis non infabre suo modo factis ducenta triginta quattuor*.

In the triumph over Perseus silver coins were carried in 750 vases, each holding three talents, 78.6 kilos (3 x 26.2), the total weight of the coins amounting to 2250

<sup>15</sup> xxxv, 48, 4; xxxviii, 14, 5; xxvi, 43, 3. I cannot verify the first. Tenney Frank, *op. cit.*, p. 132, follows Weissenborn's interpretation.

<sup>15a</sup> A. Hess, *Klio* 28, 1935, pp. 21 ff.

<sup>15b</sup> *Inscriptions de Délos* no. 399, note on p. 63.

<sup>15c</sup> Richter and Milne, *Shapes and Names of Athenian Vases*, p. 8.

<sup>15d</sup> Professor Wade-Gery drew my attention to the stele. For the date see Meritt, Wade-Gery, *ATL*, p. 166 D 8 and p. 213. The vase at the left has the profile of a kalpis, with the vertical handle on the back, and not, as Hess, p. 27, suggests, of a stamnos; nor is there any similarity between the vase and the Pompeian clay savings-box, *JdI.* 16, 1901, 170, fig. 8. The relief, badly damaged, is of coarse workmanship and much was left to painting, so it is difficult to define the other receptacles represented. Hess' "broken pots" are unconvincing; Adolf Wilhelm's money-bags seem to be more likely.

In this context I should like to mention the Chiusine cippus of the second quarter of the fifth century B.C. in Palermo, Micali, *Monumenti inediti*, pl. 24; Helbig, *AdI.* 36, 1864, pls. A, B, whence Martha, *L'art étrusque*, fig. 235 and Malten, *RM.* 38/9, 1923/4, p. 321, fig. 9; Gabrici, *Studi etruschi* 2, pl. 11, pp. 73-4. Below the dais on which the βραβεῖς are seated (Malten wrongly: spectators) six bags lie on the ground; Braun, *AdI.* 15, 1843, p. 359, thought that there was money in the bags; Helbig, *op. cit.*, p. 54, and following him Gabrici, *op. cit.*, p. 74, rightly argue that they are too big for money-containers.

talents<sup>16</sup> (58,950 kilos); each of the four men had to carry 19.65 kilos. The gold coins, 77 pots holding 3 talents apiece are 231 talents, i.e. 693,000 gold staters.<sup>16a</sup> These three-talent containers used for the transport of coins were three times the size of the largest stamnoi in the Delian treasury which had a capacity of about a gallon and held 6000 drachmae, i.e. 1500 tetradrachms or 1 talent.<sup>16b</sup>

Let me apply this to the Boian triumph. There were 234,000 *bigati*, precisely the same sum as that in M. Claudius Marcellus' triumph over the Insubres et Comenenses in 196 B.C. Pais (*op. cit.*, p. 431) here, as in other lists of triumphs, took the figures for *pondo*. In point of fact, the single coins are counted:<sup>16c</sup> if Scipio Nasica had captured from the Boii, and Claudius Marcellus from the Insubres and Comenses 234,000 lbs. of *bigati*, the haul would have amounted to about 19,647,000 denars, a sum far beyond the means and solvency of one Gaulish tribe or two; 25,500,000 denarii was the value of gold and silver in bullion and coins of which the *aerarium* disposed in 157 B.C.<sup>17</sup> "*nec fuit aliis temporibus res publica locupletior*" (Pliny, *NH.* xxxiii, 55).

The weight of 234,000 *bigati* was 912.6 kilos, that of a denar at this period being 3.9 g<sup>18</sup>; about 12 containers and 48 carriers would have been required.

The pots with the coins were placed on a *ferculum* with two shafts, which rested on the shoulders of the four men; a good illustration is to be seen on the relief in the Terme: Paribeni, *Guida*, p. 103, no. 98; Strong, *Scultura Romana*, 2, p. 295, fig. 180; Pais, *Fasti triumphales*, plate facing p. xxxii.<sup>18a</sup>

We are not told about the material of the vases which contained the *bigati*; they were made by the Gauls not without skill and in their peculiar style, a remarkably objective description of barbaric work, not, however, surprising in the second century B.C.; very possibly this was the label attached to the vases by the *quaestor urbanus* when he entered them in the inventory of the *aerarium*.<sup>19</sup>

The archaeological record of the Gauls in second-century Italy is scanty. There is no Celtic chariot preserved in tombs of the third or second century B.C.: to illustrate the *carpenta* in the triumphs, one has to turn to France, England or Thrace.<sup>20</sup>

<sup>16</sup> Facts and figures in Synkellos-Diodorus look amiss: τῇ δὲ δευτέρῃ προεκομίσθη νομισμάτων τάλαντα χίλια, ἀργύρου τάλαντα δισχίλια διακόσια . . . And on the third day χρυσοῦ τάλαντα ἓν φορήμασι διακοσίοις ἑκοοι

<sup>16a</sup> G. C. Brooke, *Numismatic Chronicle* 1933, 91. Brooke does not quote Plutarch, but an apocryphal Latin text "Livy xlv, 39": the passage is not in Livy and reads like some free translation of Plutarch. I have been unable to verify it.

<sup>16b</sup> Roussel, *op. cit.*, p. 166; Hess, *op. cit.*, p. 41.

<sup>16c</sup> Tenney Frank, *op. cit.*

<sup>17</sup> *Ibid.*, p. 127.

<sup>18</sup> Regling, *RE.* v, 207, s.v. *denarius*.

<sup>18a</sup> See also *Boll. Assoc. Internaz. degli Studi Mediterranei* 6, 1935.

<sup>19</sup> Compare the lists of other triumphs: Livy xxxiv, 52, 5 (*argenti*) *facti vasa multa omnis generis, caelata pleraque, quaedam eximiae artis*; xxxvii, 59, 5 *vasorum argenteorum—omnia caelata erant—mille pondo et quadraginta viginti tria*.

<sup>20</sup> France: Nanterre, Déchelette, *Manuel d'archéologie préhistorique celtique et gallo-romaine*, pp. 1187, 1195, 1199; Henry, *Préhistoire* ii, p. 75, fig. 4, nos. 2, 3. England: Childe, *Prehistoric Communities in the British Isles*, p. 217. Thrace: Mezek in South Bulgaria near the Greek frontier, Filow, *Bull. de l'Institut Bulgare* xi, 1937, pp. 1 ff. One of the burials in the bee-hive tomb was that of a Celt: bones of the horses and parts of the chariot were found (Filow, figs. 23, 52, 69); the bronze boar from the site (Devambes, *Grands bronzes du Musée de Stamboul*, pls. 3-5) also formed part of the interment. Date third century B.C. I shall point this out in my *Early Celtic Art*, p. 153.

The evidence for gold torques of this period, at least in Italy, is no better. Not a single vase has survived to give an idea of those in the Boian triumph.<sup>21</sup>

It is otherwise with the arms on the *carpenta*, not that we know much of the armor of the Gauls in Italy at exactly this period, but there is at least literary and archaeological evidence for the decorative display of weapons.

Diodorus xvii, 115, in his description of the pyre of Hephaestion: τὸ δὲ ἀνώτερον μέρος ἐπεπλήρωτο Μακεδονικῶν καὶ βαρβαρικῶν ὅπλων, ὧν μὲν τὰς ἀνδραγαθίας ὧν δὲ τὰς ἡττας σημαινόντων.

Plutarch (*Marcellus* 8) describes the *spolia opima* carried in the triumph of M. Claudius Marcellus after the victory at Clastidium in 222 B.C. Δρυὸς γὰρ εὐκτεάνου πρέμνον ὄρθιον καὶ μέγα τεμῶν καὶ ἀσκήσας ὥσπερ τρόπαιον ἀνεδήσατο καὶ κατήρησεν ἐξ αὐτοῦ τὰ λάφυρα, κόσμῳ διαθείς καὶ περιαρμόσας ἑκάστον.

Gaulish arms, commemorating the victories of the Pergamene kings over the Gauls, decorated the balustrade of the stoa, which was added to the temple of Athena by Eumenes II (197–59 B.C.).<sup>22</sup> Contemporary are the weapon friezes of the propylon of the Milesian town-hall, built in 175–64 B.C.<sup>23</sup>

No archaeologist could characterize these Hellenistic still lifes of armor more appropriately <sup>23a</sup> than Polybius did in his admirable description of Aemilius Paulus' Macedonian triumph in 167 B.C., which is preserved in Plutarch, *Aemilius Paulus* xxxii, 5<sup>24</sup>: τῇ δ' ὑστεραίᾳ τὰ κάλλιστα καὶ πολυτελέστατα τῶν Μακεδονικῶν ὅπλων ἐπέμπετο πολλαῖς ἀμάξαις, αἷτά τε μαρμαίροντα χαλκῷ νεοσμήκτῳ καὶ σιδήρῳ, τήν τε θέσιν ἐκ τέχνης καὶ συναρμογῆς, ὥς ἂν μάλιστα συμπεφορημένοις χυδὴν καὶ αὐτομάτως ὅμοιοι, πεποιημένα, κράνη πρὸς ἀσπίσι, καὶ θώρακες ἐπὶ κνημῖσι, καὶ κρητικαὶ πέλται καὶ θράκια γέρρα καὶ φαρέτραι μεθ' ἵππικῶν ἀναμειγμένα, χαλινῶν, καὶ ξίφη γυμνά διὰ τούτων παρανίσχοντα καὶ σάρισσαι παραπεπηγυυῖαι σύμμετρῳν ἐχόντων χάλασμα τῶν ὅπλων, ὥστε τήν πρὸς ἄλληλα κροῦσιν ἐν τῷ διαφέρεσθαι τραχύ καὶ φοβερόν ὑπηχεῖν, καὶ μηδὲ νενικημένων ἀφοβὸν εἶναι τὴν ὄψιν.

The array of this triumph was the work of a Graeculus, the painter and philosopher Metrodorus, whom Aemilius Paulus bespoke from Athens for this purpose and as tutor of his boys: Pliny *NH.* xxxv, 135: *itaque cum L. Paulus devicto Perseo petisset ab Atheniensibus uti sibi quam probatissimum philosophum mitterent ad erudiendos liberos, item pictorem ad triumphum excolendum, Athenienses Metrodorum elegerunt eundem in utroque desiderio praestantissimum.* The Athenians in the age of Pericles hardly employed a decoration expert to design the Panathenaic procession.

A fragmentary second-century triumphal relief, quoted above, shows a *ferculum*,

<sup>21</sup> Studniczka, *JdI.* xviii, 1903, p. 18, thought of the silver beaker with animal friezes from Hildesheim (Pernice and Winter, *Der Hildesheimer Silberfund*, pls. 38–41; Studniczka, *op. cit.*, figs. 3, 4), but this was made in Gaulish France in the reign of Augustus.

<sup>22</sup> *Altertümer von Pergamon* ii, pls. 43–45; Baumeister, *Denkmäler* ii, pp. 1221, 1281–4.

<sup>23</sup> Wiegand, *Milet* ii, Knackfuss, *Das Rathaus*, pls. 11, 15; pp. 80 ff., 95 ff.; Studniczka, *Symposion Ptolemaios* ii, p. 90.

<sup>23a</sup> Crous (*RM.* xxxviii, 1933, p. 3), without knowing of the Polybian passage, says of the Florentine relief pillar with weapons: "Die scheinbare Wirrnis der zahllosen Waffenstücke, die zunächst völlig gesetzlos und durch den Zufall entstanden scheint . . ."

<sup>24</sup> The Synkellos excerpt of Diodorus is untrustworthy; the selection of weapons is queer (κάμακες!), and each kind is said to have been carried in a separate carriage.

with bucrania and garlands round the frame, either carved in wood, or a bronze strip in repoussé. On the *ferculum*, cushions, and on them, a symmetrical arrangement of a *tropaeum*, weapons and, at right and left, a kneeling prisoner—no doubt, wooden statues. The whole group recurs on relief cuirasses, but was primarily designed for triumphal purposes.<sup>24a</sup>

The only part of the Boian triumph which is adequately illustrated by finds is the caparison of the horses. There is a contemporary set of silver horse-trappings from Manerbio sulla Mella (prov. di Brescia) in the Brescia Museum (fig. 1).<sup>25</sup>



FIG. 1.—INSUBRIAN SILVER PHALERA IN THE BRESCIA MUSEUM

The set comprises the following silver objects: two disks of 19.2 and 18.5 cm. diameter respectively; thirteen similar disks of a diameter between 9 and 11 cm., of which

<sup>24a</sup> Steiner, *Bonner Jahrbücher* 120, p. 55; *BullComm.* 50, 1922, pp. 183, no. 30 (pl. XVII) and no. 32; 195, no. 126; 196, no. 127. Steiner also quotes a gem. For the pose of the captives see J. D. Beazley,

eleven are completely preserved; three toggle-joints, one, as Albizzati reports, still fastened to a disk; four half-tubular curved devices of unknown purpose, decorated with the head of a Gaul, wearing a torque and probably helmeted, and the highly stylized head of a ram. I illustrate one of the larger phalerae: the smaller bear a similar decoration, but their central boss is plain.

These are the only Celtic silver horse-trappings preserved, all others are bronze; silver, for any purpose, is only used among the Western Celts in Switzerland, North Italy and Eastern France.

In the middle, a three-part whirligig, differing from the usual Early Celtic type,<sup>26</sup> but with analogies on Gaulish coins of the second and first centuries B.C.<sup>26a</sup> Round it, a circular frieze of heads looking towards the centre, a design of classical origin.<sup>27</sup> The only other Celtic example is also a phalera, about two hundred years older, from Hořovice, Bohemia.<sup>28</sup> The heads have large eyes, with beaded or notched eye-



FIG. 2.—BOIIAN SILVER COIN (from De la Tour, *Atlas de monnaies gauloises*, pl. 51, no. 9925)

lashes; the mouth is an arc with the corners drawn down, which gives the faces a dull, morose expression; the forehead is low; the hair is drawn in radial strokes. These heads differ strongly from Early Celtic ones and go with some works made about the time of the birth of Christ, a bronze from Krivoklát, Bohemia,<sup>29</sup> less closely with the chariot from Dejbjerg, Denmark;<sup>30</sup> they are also related, as Albizzati (*op. cit.*, p. 575) observed, to the human faces which decorate a certain class of Celtic daggers.<sup>31</sup>

Manerbio is in the territory of the Insubres. The objects shown in P. Cornelius' triumph were Boian. That there was not much difference in crafts and style between the two neighboring tribes might be assumed, but can be proved: there are silver coins of the Boii<sup>32</sup> (fig. 2); the heads are almost identical with those on the Insubrian phalerae.

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*JHS.* 59, 1939, p. 40. Other Roman reliefs showing statues carried on *fercula* in procession: (1) British Museum, *JRS.* vii, 1917, pl. 8; p. 285 (Cybele, with a Gallus on either side). (2) San Lorenzo, Rome, Matz-Duhn, no. 2245; *Ad I.* 1839, pl. N; Gerhard, *Antike Bildwerke*, pl. 120, 1 (Cybele and Victory).

<sup>26</sup> Albizzati, *Historia* vii, 1933, pp. 570 ff. I am greatly indebted to the Keeper of the Brescia Museum, Dr. Scrinzi, for his generous permission to study and photograph the objects. I shall republish the find in *Early Celtic Art*, no. 84.

<sup>26a</sup> Jacobsthal, *Early Celtic Art*, pp. 76-78.

<sup>27</sup> E.g. silver of the Carnutes, De la Tour, *Atlas de monnaies gauloises*, pl. XVIII, no. 6032, and silver of the Volcae Tectosages, ib. pl. X, no. 3560 (Blanchet, *Traité des monnaies gauloises*, fig. 149).

<sup>28</sup> Silver omphalos phiale from the second kurgan of the Seven Brothers, Minns, *Scythians and Greeks*, fig. 107; Rostovtzeff, *Skythien und der Bosphorus*, p. 314; Luschey, *Die Phiale*, p. 138, no. 3 and p. 140: date of the tomb 450-40 B.C. (Schefold, *Eurasia Septentrionalis Antiqua* xii, pp. 12, 17). Gold omphalos phiale of the later fourth century B.C. from Kul-Oba, Minns, *op. cit.*, fig. 99; Luschey, *op. cit.*, p. 96, no. 11 and p. 112. Silver egg-phiale, early Hellenistic, from Ancona, *NS.* 1910, 353; *AA.* 26, 1911, pp. 161-2; Luschey, *op. cit.*, p. 132 no. 3.

<sup>29</sup> Déchelette, *op. cit.*, fig. 690; Schranil, *Vorgeschichte Böhmens und Mährens*, pl. 45, 20; Albizzati, *op. cit.*, had already drawn attention to the piece. <sup>30</sup> Pič, *Le Hdradischt de Stradonitz*, p. 67, fig. 9.

<sup>31</sup> Ebert, *RV.* ii, pl. 181.

<sup>32</sup> E.g. Déchelette, *op. cit.*, fig. 474, 2, 3a.

<sup>33</sup> De la Tour, *Atlas de monnaies gauloises*, pl. 51, no. 9925; Blanchet, *Traité des monnaies gauloises*, p. 452, fig. 503; Göhl, *Gróf Desseuffy Miklós barbár pénzei*, pl. 6, no. 160; Paulsen, *Die Münzprägungen der Boier*, text, pl. B, nos. 34-8. These coins were struck and found in Noricum, one of the Transalpine abodes of the Boii. War prevented me from seeking the advice of Austrian scholars competent in the problem. Pertinent remarks in *Wiener Praehist. Zeitschr.* 23, 1936, pp. 8 ff. (Pink).

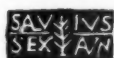
## TERRA SIGILLATA FROM MINTURNAE

THE MATERIAL presented here is part of the terra sigillata found by the archaeological expeditions to Minturnae ( Minturno) conducted in 1931-32 and 1933 by Dr. Jotham Johnson under the auspices of the University of Pennsylvania Museum and the International Mediterranean Research Association. From a somewhat larger assortment of less spectacular material Dr. Johnson selected the present sherds, providing also the drawings of stamps, the photographs (except fig. 6), and the topographical data. For fuller explanation of the last, see his *Excavations at Minturnae i, Monuments of the Republican Forum*, 1935, especially pp. 2-10 and fig. 1.

The manuscript of this article was prepared in essence shortly after the material became available, but publication was deferred until a visit to Italy might give the writer an opportunity to study the entire body of sigillata from the site and perhaps to make some additional photographs.<sup>1</sup> The circumstances surrounding this sojourn were not propitious to the complicated tasks of locating, unpacking and annotating the fragments, and the project was indefinitely postponed. Yet it remains as an important bit of unfinished business, especially as regards the complete contents of Well no. 1, and the recording of decorated pieces in addition to those shown here. Our present observations are therefore simply tentative.

In this group the only pieces which are both decorated and signed are nos. 29, 30 and 39 (*Sex. Mu(rri?) Pi(sani?)*, *N.N.H.* and *Hilari Ra[sini]*), of which only the last two are illustrated. Incidental allusion to other decorated ware from the Pentagonal Tower and from the Theatre is included at the end of this article, where reference to the relative proportions of Campanian<sup>2</sup> and other Italian sigillata is also made. The appearance of two Gaulish signatures is further of interest.

In addition to acknowledging the kindness of Dr. Johnson, I must also express my indebtedness to Dr. Oxé, whose good will and vast knowledge I have once more found an insurance against errors, and an inspiration in the pursuit of a common interest.



1



2



3



4



5



6

1. *Salvius Sex. Ann(i)*. Shape: very large flat plate. The stamp is on the outer circle of the bottom, inside. Provenance: undated fill north of Temple A.

This potter was active at Arezzo.<sup>3</sup> Signatures of Sex. Ann(ius) repeated on the same plate, as here, are datable "in the last decade before Christ at the latest."<sup>4</sup>

<sup>1</sup> Occasional incidental allusions to sigillata from Minturnae have appeared, especially a summary discussion of Well no. 1 in *AJA*. xlii, 1938, p. 128, and a photograph of an unsigned fragment of late Italian sigillata reproduced in *AJA*. xl, 1936, p. 443.

<sup>2</sup> Of particular significance is the observation of Bruzza, *BdI*. 1875, p. 247, that moulds and vases found at Pozzuoli are not of Puteolan clay. He recalls Martial xiv, 102, 114 and Pliny xxxv, 26 for the ceramic industry at Cumae and Sorrento.

<sup>3</sup> *CIL*. xi, 6700, 73a may be identical with the Minturnae stamp. See also ii, 4970, 454, from Tarragona.

<sup>4</sup> Oxé, *Germania* xi, 1928, p. 128.

2. **Ardac(i)**. Shape: large shallow bowl. Provenance: late fill north of Temple B. Ardacus was a potter of La Graufesenque, who manufactured both plain and decorated ware during the principates of Tiberius and Claudius.<sup>5</sup>

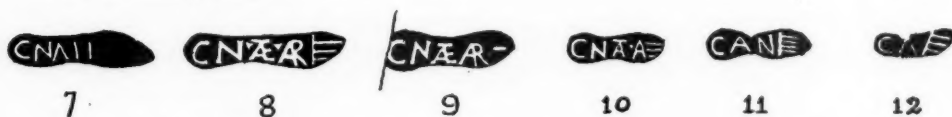
3. **Atei**. Shape: small plate (?). Provenance: "West salon" of the Theatre. For the signature, see no. 4.

4. **Cn. Atei**. Shape: very large flat plate; diam., probably about 30 cm. Provenance: Well no. 1.

This potter was very active in the principate of Augustus, but continued work under Tiberius. The evidence of this signature's date (see below), combined with the relative frequency of the name with and without praenomen at Haltern,<sup>6</sup> may show that *Cn. Atei* is a later form than *Atei*.

5. **Cn. Atei**. Shape: medium-sized flat plate. Provenance: late fill north of Temple B.

6. **Cn. Ate(i)**. Shape: medium-sized cup. Provenance: Pentagonal Tower (no. 2) of north colony wall.



7. **Cn. Ate(i)**. Shape: medium-sized flat plate. Provenance: south foundation vault of Temple L.

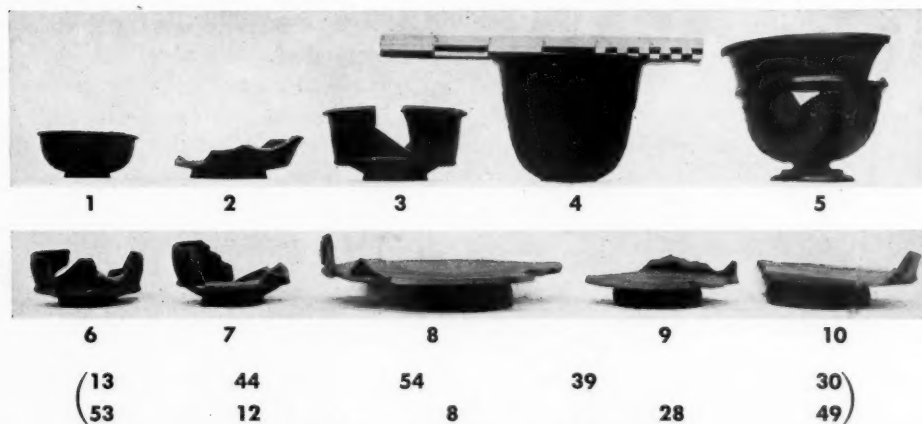


FIG. 1.—TERRA SIGILLATA FROM MINTURNÆ

8. **Cn. Ate(i). Ar(retini)**. Shape: fig. 1, 8; original diam. ca. 23 cm.; ht., 5.7 cm. Provenance: Pentagonal Tower (no. 2) of north colony wall.

Whatever school of thought one may follow regarding the location of the factory or factories of the more famous Ateius, there can be no doubt that Cn. Ateius Arretinus and his contemporary Cn. Ateius Amandus were located in Italy. Oxé has

<sup>5</sup> Oswald, *Index of Pottery Stamps*, p. 22.

<sup>6</sup> Loeschke, *Mitt. aus Westfalen* v, 1909, p. 169; Hähle, *ibid.*, vi, 1912, p. 42.

been tempted to identify these two with each other under the name of Cn. Ateius Amandus Arretinus,<sup>7</sup> but better evidence is needed. If the two be considered as separate, *Arretinus* may or may not imply that vessels so stamped were actually made at Arezzo. The negative evidence from *CIL*. xi, as well as from Rome itself, strongly suggests that if such implication was intended at all, it was by way of prevarication, for the distribution of Arretinus<sup>8</sup> and Amandus,<sup>9</sup> as well as *Cn. A. A.*, which is susceptible of either expansion,<sup>10</sup> seems in no uncertain terms to locate these men in Campania, for which support is found in the present group from Minturnae. In fact, speaking more generally, the stamp *Arretinus* and others which clearly imply an Arretine origin of either the vase or the potter, which are found widely distributed over the Roman world,<sup>11</sup> are lacking in Arezzo itself.<sup>12</sup> One can only guess as to their true origin, but certainly most of them never saw the town of their alleged manufacture.

As for Cn. Ateius himself, if one remove Ateius Arretinus from Arezzo, one simultaneously removes most of the evidence that any of the Ateii were ever active there, and one is consequently forced to seek a location for their shop elsewhere in the peninsula.

9. Cn. Ate(i) Ar(retini). Shape and dimensions: unrecoverable. Provenance: unrecorded.

10. Cn. At(ei) A(rretini) or A(mandi). Shape: small cup. Provenance: Well no. 1.

For the expansion of the signature, see no. 8; but *A(rretini)* is more consistent with the archaeological context at present.

11. CAN, probably *C. A(villi) N(ymphaei)*. Shape: small cup. Provenance: West Gate (Porta Roma).

CAN appears rarely at Arezzo, if at all,<sup>13</sup> but several times at Rome,<sup>14</sup> with varying interpunctuation and always in *planta pedis*, thus precluding an identification with C. Annius, whose signature is regularly in a rectangle. C. Avillius Nymphaeus is not reported from Arezzo.

<sup>7</sup> "Terra-sigillata-Gefäße des Cn. Ateius" in *Bonn. Jahrb.* ci, 1897, p. 28, emending X 8056 419 ATE MMAR in *planta pedis*, which in turn rests upon the apographon of Riccio, "Notizie degli Scavamenti del Suolo dell'Antica Capua e dei suoi Monumenti" (extracted from *Poliorama Pittoresco*, Naples, 1855), pl. vii, 8.

<sup>8</sup> III, 12014, 100 (now at Pest); Pais, *CIL*. v, Suppl. 1080, 87 (near Carrù); viii, 10479, 8 (Constantine); x, 8055, 8 (4 examples from Pompeii); 8056, 419 (cf. the preceding note); 421 and 451 (Cagliari); 457 (Catania); Holwerda, *Laat-grieksche en romeinsche Gebruiks-aardewerk*, no. 489 (Tunis).

<sup>9</sup> II, 6257, 23 (New Carthage); viii, 10479, 4 (Constantine); x, 8055, 4h, and probably also 5 and 6 (several examples from Pompeii and Herculaneum); 8056, 46 (Pozzuoli, Catania); 419 (cf. the preceding two notes); a possible example from Pozzuoli in the Altes Museum, Berlin, which may be the same as the instance in the *Corpus*. Further, ought not C.N.AT.M in *planta pedis* (Alexandria; Pagenstecher, *Exped. v. Sieglin* ii, 3, p. 103, 32) and C.N.A.A (Agora, Athens; Iliffe, *QDAP*. vi, 1936, p. 39) to be attributed to Amandus?

<sup>10</sup> X, 8055, 4; 8056, 5 (Pompeii, Pozzuoli, Catania, Sassari). A signature in the *magazzino* at Herculaneum must also be read thus because the second letter of the cognomen is not clear.

<sup>11</sup> References in xi, 2<sup>a</sup> (Add.) 8119, 1 (6 examples at Bologna); Iliffe, *QDAP*. vi, 1936, p. 28 [*Exped. von Sieglin* ii, 3, p. 103, 26]; Demangel-Laumonier, "Fouilles de Notion" in *BCH*. xlix, 1925, p. 385 (2 examples); Holwerda, *op. cit.*, no. 520 (Smyrna).

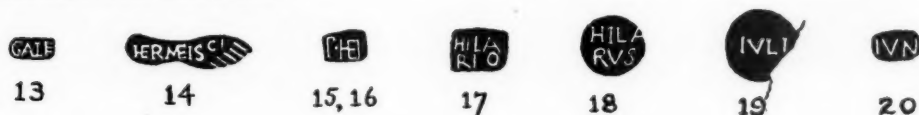
<sup>12</sup> An exception is *Arretin* ( ) *L. Surae*, xi, 6700, 128a.

<sup>13</sup> XI, 6700, 4.


<sup>14</sup> XV, 4926 and *MAAR*. vii, 1929, p. 189, where a few references are collected.

12. CA. Shape: fig. 1, 7; original diam., 10.5 cm.; ht., 5.8 cm. Provenance: Pentagonal Tower (no. 2) of north colony wall.

CA (*sic*) appears at Rome and Pompeii in *planta pedis*.<sup>15</sup> The shape of the present bowl suggests contemporaneity with the illegibly signed no. 53 (fig. 1, 6), which is from Well no. 1 and is hence early Tiberian. The basic form, which is not uncommon, seems to have evolved from the shape seen here toward a proportionally lower and more flaring upper zone. Parallels known to me are discussed in *Antioch-on-the-Orontes* iv, no. 106; to these should be added a bowl in the later style, but perhaps signed by Naevius in *planta pedis sinistri*, in the Museum Antiker Kleinkunst, Munich. The present example and no. 53 are probably of non-Arretine origin, perhaps from Campania.<sup>16</sup>



13. Gal(l)i. Shape: fig. 1, 1; diam., 9.6 cm.; ht., 4.2 cm.; thickness of fabric, 0.2 cm. On the lip, horizontally, a small applied "handle" design like those frequently applied to vertical rims, e.g. no. 37. Provenance: Imperial fill between west flank of Temple E and Stoa.

The most satisfactory parallels to this signature are two examples from Rome.<sup>17</sup> Parallels to the shape are discussed in some detail in *Antioch-on-the-Orontes* iv, no. 102, and need not be reproduced here. The placing of small horizontal handles like ours upon the lips of vases of other shapes is not unknown; Altes Museum, Berlin, Inv. no. V.I.4763, and a bowl in the Museum Antiker Kleinkunst, Munich, are both Italian prototypes of the Gaulish Form 27, with the addition of a small horizontal lip wide enough to carry these spirals.<sup>18</sup> The latter is stamped approximately thus: . I have also seen such appliqué spirals on the horizontal lips of bowls like our no. 54 below, but only occasionally. The bowl by Gal(l)us at Genova-Pegli, for instance, omits them.

14. Hermeisci. Shape: medium-sized flat plate. Provenance: Well no. 1.

The same signature appears at Solus and Catania,<sup>19</sup> but is absent from *CIL*. xi and xv. It is certainly not of Arretine manufacture, but very likely comes from Pozzuoli. A more difficult problem is the definition of Hermeiscus in relation to the *Herm*( ), *Herma*( ), *Hermis*( ), and *Hrmisc|us Nei*( ) which are found in large numbers at Pozzuoli. The apparent chronology strengthens the temptation to

<sup>15</sup> XV, 5067 and x, 8055, 13, respectively.

<sup>16</sup> A parallel in the Altes Museum, Berlin, bears the Puteolan signature *Specul(ator)*: cf. Bruzza, *BdI*. 1875, p. 256.

<sup>17</sup> *MAAR*. vii, 1929, p. 197, reading *Gali in planta pedis*, which Oxé attributes to L. Alfius Gallus. To the parallels there listed, add xv, 5223c, GAI in a quadrangle four times repeated (hardly the same potter); xi, 2<sup>a</sup> (Add.) 8119, 23 (Saturnia in Etruria); Genova-Pegli Museum, a duplicate of our signature on a bowl just like our no. 54 below.

<sup>18</sup> These should, of course, be distinguished from the Augustan Haltern Form 11 (Loeschcke, *Mitt. aus Westfalen* v, 1909, fig. 4, 11-12, and pl. X, 11; Oswald and Pryce, *Terra Sigillata*, pl. XLIX, 1) by the omission of the lip on the Haltern examples.

<sup>19</sup> X, 8056, 162.

identify, but the orthography and cutting of the seal raises some hesitation.<sup>20</sup> There was probably some connection, however, perhaps a generation apart, with the present seal initiating a later development than those in a rectangle. Oxé points out<sup>21</sup> that a seal of Hermaiscus at Windisch (Vindonissa) must be placed in the principate of Tiberius,<sup>22</sup> which corresponds closely to the date assigned to Well no. 1. The stylistic details of the stamp are very close to those of *Sereni* (no. 44 below) from the same well.

15. Probably to be resolved **P. Hert(ori)**. Shape: medium-sized flat plate. Provenance: northwest corner of Stoa in Forum.

Compare HEI (x, 8056, 491) and the signatures of P. Her(torius) at Arezzo and elsewhere.<sup>23</sup> The stamp is impressed more than once, a sign of early manufacture consistent with the date of Hertorius.<sup>24</sup>

16. Stamp and shape the same as the preceding; provenance unrecorded. Both signatures may be from the same plate.

17. **Hilario**. Shape: small cup (?). Provenance: thirteenth arcade of the Theatre.

The name does not occur at Rome or Arezzo, but is found at Naples (?).<sup>25</sup> It is tempting but unsafe to identify Hilario with *Hilar*, which was found twenty times at Pozzuoli.<sup>26</sup> Augustan, non-Arretine.

18. **Hilarus**. Shape: unrecoverable. Provenance: "West salon" of the Theatre.

References to the occurrence of this name are given in xi 6700, 321 (Arezzo and Faenza); it also appears at Haltern prior to A.D. 9. The identical stamp appears in xv, 5261a (Rome), viii, Suppl. 3, 22645, 167 (Carthage and Leptis Minor), and perhaps iii, Suppl. 3, 12014, 294 (Siszek). *HILAR*, on the other hand, was a potter of Pozzuoli (see no. 17), and precise attribution of our signature is unsafe. Round stamps are Augustan and early Tiberian; they occur several times at Haltern.<sup>27</sup>

19. **Iuli**. Shape: Medium-sized cup. Provenance: Disturbed stratification along north flank of Temple E (Capitolium).

Julius or M. Julius was a potter of Pozzuoli.<sup>28</sup> The name appears in a rectangle<sup>29</sup> and *in planta pedis*.<sup>30</sup> Dr. Oxé dates this stamp as early Tiberian, contemporary with Hilarus and T. Malius Fortunatus.

<sup>20</sup> For a photograph of HERM, see van Ingen, *CVA*. University of Michigan i (U.S.A. 3), pl. xxvi, 6, with Oxé's comments in *Bonn. Jahrb.* cxxxix, 1934, p. 233, where Transalpine and Spanish occurrences are also listed. Add to these ii, Suppl. 6257, 90 *Hermaisci* and *Hermeisci*, both *in planta pedis*, from Carthage (Spain) and Saguntum (?).

<sup>21</sup> *Loc. cit.*

<sup>22</sup> XIII, 10010, 2535, reading ERMAL. He discusses the Arretine support for the conventional early Tiberian dating of Vindonissa in *Germania* xi, 1928, pp. 127 ff., but says nothing of this signature; he points out that no seals *in planta pedis* have been found there.

<sup>23</sup> References collected in *MAAR*. vii, 1929, p. 198.

<sup>24</sup> Ihm, *Bonn. Jahrb.* cii, 1898, p. 123. Cf. Oxé, *Germania* xi, 1928, p. 129, for the differentiation of this Hertorius, who always signs his praenomen, from a later Hertorius.

<sup>25</sup> X, 8056, 170.

<sup>26</sup> Bruzza, *BdI*. 1875, p. 255.

<sup>27</sup> Loeschke, *Mitt. aus Westfalen* v, 1909, pls. xxvi-xxix.

<sup>28</sup> X, 8056, 178-180 (Capua, Bacoli, Sassari, Cagliari, and especially Pozzuoli), with no reference to the shape of the stamp.

<sup>29</sup> Arronches Junquero, *O Archeologo Português* vii, 1903, p. 178 (Troia de Setubal).

<sup>30</sup> XV, 5274 (Rome) and xi, 6700, 328 (Castelleone/Suasa, Umbria).

20. **Iun(i)**. Shape: medium-sized cup. Provenance: Pentagonal tower (no. 2) of north colony wall.

The same signature occurs at Tarragona.<sup>31</sup> IVNI written right to left appears twenty times at Pozzuoli<sup>32</sup>—a unanimity which makes me hesitate to connect it with our signature. I also hesitate to reverse our stamp and connect it with C. NAI *in planta pedis*.<sup>33</sup>



21. **V.L.C.** Shape: large flat plate. Provenance: Well no. 1.

These initials are unattested in the *Corpus*; at their face value they are meaningless. VE-LM|GALLI appears, however, at Rome, L C is found at Lisbon, and A.VLCA is reported from Pozzuoli.<sup>34</sup> Our signature is probably of Puteolan, or at least Campanian, origin.

22. **Sex. M. F(es . . .)**. Shape: very large bowl. Provenance: Pentagonal tower (no. 2) of north colony wall.

This is not the place for a dissertation on the difficult problem of Sex. M. Fes( ) and his contemporaries. Increasing information has served to complicate the matter rather than otherwise. A few salient points are, however, clear. (1) *Sex. M. F.* is a different person from *Sex. M. P.* (no. 29, below), although their stamps are probably frequently confused by observers. (2) *Sex. M. Fes( )*, *Sex. M. F.* and *S.M.F.* may in some instances represent different shops, although they can probably be equated in many cases. (3) This shop, or shops, must have employed a substantial number of workers whose capabilities and ceramic traditions varied. One might attempt to explain on this ground the wide technical variations between discrepant products signed with these initials. (4) It is, however, more likely that these signatures fall into at least two periods, of which the earlier would be represented by our no. 23, and the later by the present number. A parallel to the former is in the Metropolitan Museum; the shape might be as early as Tiberius, or at least Claudian.<sup>35</sup> The later period is characterized by much larger and cruder lettering of signatures like ours,<sup>36</sup> the appearance of the lunate stamp, and a degraded style of decoration on figured bowls.<sup>37</sup> Furthermore, stamps intended for impression on completed vases were sometimes wrongly used on moulds, thus producing retrograde and intaglio stamps on the final product.<sup>38</sup> (5) The shop is liberally represented at Pompeii and Herculaneum,<sup>39</sup> but Dott. Da Vino informed me at Pompeii that no signatures *in forma lunata* are known from the excavations. Nor does the Pompeii Museum display any

<sup>31</sup> II, 4970, 245.

<sup>32</sup> X, 8056, 184.

<sup>33</sup> XV, 5370, where, among other discrepancies, the A is written with the cross-bar.

<sup>34</sup> XV, 5298, ii Suppl. 6257, 102, and x, 8056, 393, respectively.

<sup>35</sup> *Sex. M. F.* neatly cut *in planta pedis* on a plate with a quarter-round moulding between the wall and floor; Inv. no. 17.194.868.

<sup>36</sup> Cf. *MAAR*, vii, 1929, pp. 199 f.

<sup>37</sup> Cf. *AJA*, xl, 1936, p. 438, figs. 1, 2—the former signed in a crescent.

<sup>38</sup> Cf. no. 29, below and both signatures mentioned in the preceding footnote.

<sup>39</sup> At the latter, in the house behind the Thermopolium, all seven dishes are stamped *S.M.F. in planta pedis*—an interesting hint as to ancient techniques of distribution.

bowls as badly decorated as the late Italian sigillata styles. (6) The inference is that instead of being contemporaneous with the eruption, the last gasps of the Italian sigillata industry, of which there are many extant, really fall appreciably later—perhaps extending into the Trajanic period. The earlier signatures might perhaps bear comparison with those from Pompeii, but they cannot be of the same epoch as the degraded post-Pompeian Italian sigillata. But analysis of the whole Late Italian ceramic problem depends on more precise comparison of the epigraphic evidence than is possible with the resources of the *Corpus*.

23. **Sex. M. F(es . . .)**. Shape: medium-sized flat plate. Provenance: south foundation vault of Temple L.

See the preceding number.

24. **C.M.R.** Shape: small flat plate. Provenance: south foundation vault of Temple L.

The stamp is frequent at Rome and Arezzo.<sup>40</sup>

25. **Feci T.**<sup>41</sup> **Malius Fortunatus**. Shape: small cup. Provenance: late fill north of Temple B.

Two examples apparently identical with ours appear at Rome<sup>42</sup> and probably also at Syracuse<sup>43</sup> and Tarragona.<sup>44</sup> Other instances are at Poitiers, Trion (Lyon) and Neuss (Sels Tile-works).<sup>45</sup> On the other hand, the consistent reading at Haltern is *T. Mal(ius) Fort(unatus) feci(t)*,<sup>46</sup> or *Fecit Fortu(natus) T. Mal(ius)* in a rectangle,<sup>47</sup> and the former of these readings, namely the arrangement in only three lines, with *nomen gentile* and *cognomen* truncated, and with *feci* below, is the only variety reported from Mainz.<sup>48</sup> Since the settlement at the Sels Tile-works persisted until A.D. 17/20,<sup>49</sup> while the settlement at Haltern ended in A.D. 9,<sup>50</sup> we suppose that our Minturnae stamp, paralleled at the former but not at the latter, falls in the second Christian decade. Presumably the rectangular stamps of Fortunatus at Haltern are even earlier than the earlier variety of round stamps, but if so, the interval cannot be very great because both the rectangular and the round stamps appear on the same shape of cup, Loeschcke's type 8a or 8b, which is demonstrably not early at Haltern.

The name of T. Malius Fortunatus is not found in *CIL*. xi and hence, although it emanates from somewhere in Italy, it is not true Arretine. It is also surprisingly scarce in Gallia Narbonensis.<sup>51</sup>

26. **MEII**. Shape: medium-sized flat plate. Provenance: unrecorded.

<sup>40</sup> XV, 5302 and xi, 6700, 359, respectively. For other references to *CIL*., see *MAAR*. vii, 1929, p. 200.

<sup>41</sup> Altering Johnson's apographon in conformity with the great majority of the parallels, which probably all reflect the same potter.

<sup>42</sup> XV, 5309.

<sup>43</sup> X, 8056, 535.

<sup>44</sup> II, 4970, 292a, where the editor may have omitted *feci* from its proper place.

<sup>45</sup> XIII, 10009, 160b.c<sup>2</sup>.g<sup>2</sup>.

<sup>46</sup> Loeschcke, *Mitt. aus Westfalen* v, 1909, p. 177, with discussion, and Hähle, *ibid.* vi, 1912, p. 45, fifteen examples.

<sup>47</sup> Hähle, *ibid.*, three examples.

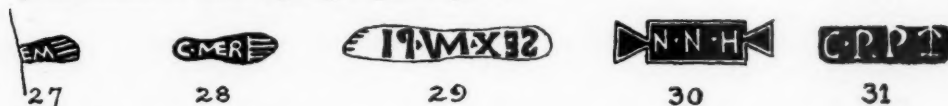
<sup>48</sup> Geissner, *Die im Mainzer Museum befindlichen feineren Gefässe der augusteischer Zeit und ihre Stempel*, 1902, p. 10. Similar examples from Mainz, Neuss, Xanten, Grozon (Jura), Bordeaux, Poitiers, and Trion are in xiii, 10009, 160.

<sup>49</sup> Strack, *Bonn. Jahrb.* cxi/cxii, 1904, p. 424.

<sup>50</sup> Loeschcke, *op. cit.*, pp. 120–127.

<sup>51</sup> Oxé, *Bonn. Jahrb.* cii, 1898, p. 154, suspects that it may be found in xii, 5686, 137 and 1068.

*Lectio difficilis*. I have found no convincing parallels to Johnson's reading, and yet hesitate to emend to MEM(mi), because Memmius regularly includes his praenominal C. when signing in *planta pedis*.<sup>52</sup>



27. Probably C. M]em(mi). Shape: unrecoverable. Provenance: landscaping fill between Temple E (Capitolium) and Stoa.

For references to Memmius, see the preceding footnote. Since his stamps are usually in *quadrato*, he was essentially an Augustan potter; the present example is one of his latest, dating early in the principate of Tiberius.

28. C. Mer( ) or C. Me( ) R. Shape: fig. 1, 9; original diam., ca. 13.5 cm.; ht., 3.8 cm. Provenance: Well no. 1.

For references to parallels in *CIL.*, see *AJA.* xxxiii, 1929, p. 493; for Near Eastern references, cf. Iliffe, *QDAP.* vi, 1936, p. 40; *QDAP.* ix, 1939, p. 55. None are reported from Arezzo itself, but the distribution implies that Arezzo was the point of origin, and signed pieces of C. Mer( ) are indistinguishable from true Arretine. It is perhaps significant that it seems not to have penetrated Spain or Transalpine Gaul, but to have taken an easterly course.

29. Sex. Mu(rri?) Pi(sani?) or P(r)i(s . . .). Shape: heavy cup. Provenance: Imperial fill between west flank of Temple E (Capitolium) and Stoa.

"Decoration in relief: Two winged figures approach a seated female figure who holds a child in her lap. The cup was broken in antiquity and repaired with small lead clamps" (Johnson).

This name is absent from Rome, from vol. xi, and from the Three Gauls and Germany (xiii). It occurs in Spain,<sup>53</sup> in North Africa,<sup>54</sup> in southern Italy and Sicily, including six examples at Pozzuoli,<sup>55</sup> and perhaps in Southern France.<sup>56</sup> The present stamp is unusual in having intaglio rather than raised letters in a *planta pedis* occurring on the exterior of a decorated bowl, and the whole is retrograde. Similar cases are xv, 5297e and *AJA.* xl, 1936, p. 438, figs. 1, 2, all three by S.M.F. (no. 22 above, *q.v.*) to whose products the work of Sex. Mu( ) Pi( ) is closely related in date and techniques.<sup>57</sup>

30. N. N(aevius) H(ilarus). Fig. 1, 5 and fig. 2. Provenance: Pentagonal Tower (no. 2) of north colony wall.

"Decoration in relief: left to right (1) nude male figure with cloak over shoulder

<sup>52</sup> For references to Memmius in *CIL.* cf. *MAAR.* vii, 1929, p. 201.

<sup>53</sup> II, 4970, 281, S.M.P.

<sup>54</sup> VIII, Suppl. 3, 22645, 210, S.M.P. in a rectangle, and SEX-M.P.

<sup>55</sup> X, 8056, 197.

<sup>56</sup> XII, 5686, 505, S-M-PR; 506, P M S "en trèfle;" 613, MVRI-PRIS from the Catalogue of the Dumas Collection in *Acta Acad. Nimes* 1878, p. 74, pl. 4<sup>99</sup>.

<sup>57</sup> Note, however, that Sex. Mu( ) Pi( ) has not yet been found in the Near East, although several examples of Sex. M. F. and L. R(asinius) P(isanus) are reported from Corinth and Athens—all but one in *planta pedis* and perhaps of an earlier period in their activity (Iliffe, *QDAP.* ix, 1939, pp. 54, 63; Comfort, *J.A.O.S.* lviii, 1938, pp. 55 f.). L. Rasini Pisani in forma lunata from Delphi (*Fouilles de Delphes* v, p. 180, fig. 759) is later, contemporary with our Sex. Mu( ) Pi( ).



FIG. 2.—BOWL BY N. NAEVIUS HILARUS, FROM MINTURNAE (NO. 30)



FIG. 3.—BOWL BY N. NAEVIUS HILARUS, AT CANDIA



FIG. 4.—BOWL ATTRIBUTED TO N. NAEVIUS HILARUS, AT MILAN



FIG. 7.—BOWL BY HILARUS RASINI, FROM MINTURNAE (NO. 39)



FIG. 6.—PLATE BY L.R.C., FROM MINTURNAE (NO. 37)



and caduceus (?); (2) nude male figure with sword, left leg braced upon a rock; (3) female figure playing lyre; (4) seated male figure (legs and top of head preserved); (5-8) all four figures repeated" (Johnson).

The signatures of this Augustan potter are best known through the excavations at Pozzuoli, first published without illustrations by Bruzza. Some of this material later found its way into the museums of northern Europe, especially the Altes Museum, Berlin, and has since been incidentally published with illustrations and discussion, e.g. by Dragendorff, and by Oxé, *Arretinische Reliefgefäße vom Rhein*, nos. 311-323. I have found no reproductions of the figures here described, but as Dragendorff points out, the repertory of figures at Pozzuoli was small;<sup>58</sup> when the Minturnae vase is presented more completely and when other vases by Naevius are published, some identifications may be possible.<sup>59</sup>

Naevius occupies a position at Pozzuoli somewhat analogous to that of the Perennii at Arezzo: he represents the best local decorative tradition; his wares found a fairly extensive market; they were about contemporary; and the decorative motives, though not the same, were sufficiently similar to be comparable.

31. C. P( ) P( ). Shape: not described. Provenance: fill below colony wall.

The anchor symbol following the initials is not otherwise known to me on sigillata,<sup>60</sup> but other small devices of various kinds are not uncommon, and this potter himself shows various other idiosyncrasies, e.g. the *solea* of MAAR. vii, 1929, p. 205, no. 108, the reversed letters of *ibid.* no. 106, etc., and regularly the open P, as here. The signature itself is fairly common in Tuscany and southward in Italy and Africa, but occurrences elsewhere are dubious, unless several decorated fragments at the Castello Sforzesco, Milan, were locally found. They are not genuine Arretine. Cf. *Ser. M. F.* (no. 22 above), with whom C.P.P. has much in common.

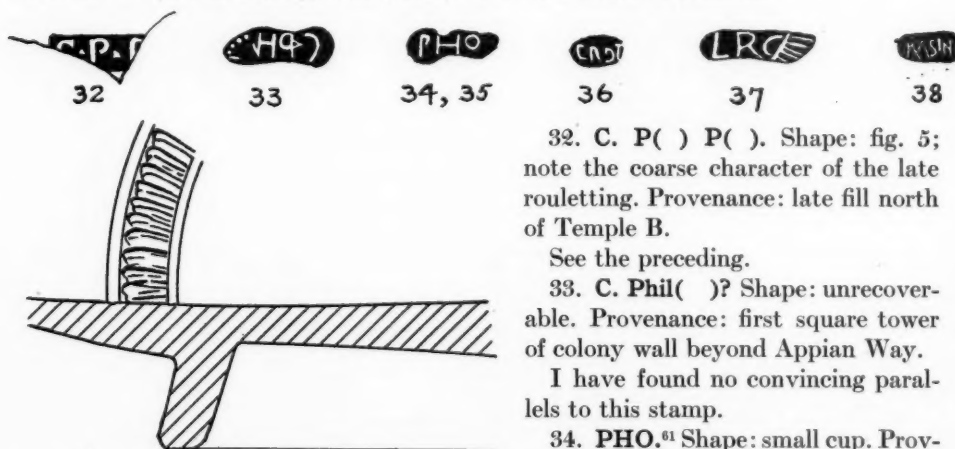


FIG. 5. — PLATE BY C.P.P., FROM MINTURNAE (NO. 32)

32. C. P( ) P( ). Shape: fig. 5; note the coarse character of the late rouletting. Provenance: late fill north of Temple B.

See the preceding.

33. C. Phil( )? Shape: unrecoverable. Provenance: first square tower of colony wall beyond Appian Way.

I have found no convincing parallels to this stamp.

34. PHO.<sup>61</sup> Shape: small cup. Provenance: Well no. 1.

<sup>58</sup> *Bonn. Jahrb.* xcvi, 1895, p. 77.

<sup>59</sup> The present is as good an excuse as any for illustrating a bowl by Naevius in the Candia Museum (fig. 3). The photograph was sent several years ago by Dr. Marinatos, with permission to publish. Though irrelevant to a discussion of Minturnae, it shows some of Naevius' decorative techniques; cf.

This and the following number were found together and are identical. The signature appears in *planta pedis* at Carthage,<sup>62</sup> at Capua<sup>63</sup> and Rome.<sup>64</sup> This distribution suggests a Campanian rather than Arretine manufacture, but there is no reason for assuming Pozzuoli.

35. PHO. Signature, description and provenance are the same as of the preceding.

36. Prot(i)? Shape: small cup. Provenance: unrecorded.

If correctly read, this stamp represents Protus, who was a slave and later a freedman of Calidius Strigo (Oxé). The two names appear together,<sup>65</sup> and Protus occurs alone<sup>66</sup> and apparently with a slave of his own;<sup>67</sup> at Rome the name of Calidius is frequent alone or with other slaves, while *Proti* "circ. scr. intra coronam" occurs only alone.<sup>68</sup>

37. L. R(asi) C(iri). Shape: fig. 6. Provenance: Well no. 1.

The signature *LRC* appears at Rome,<sup>69</sup> but only doubtfully at Arezzo. Both it and the expanded form seem to have been most at home at Bologna.<sup>70</sup> As for the shape, it has long been apparent that the rims of sigillata plates evolved through three stages: the hanging lip, the profiled rim, and the unprofiled vertical rim carrying *appliqué* decorations. The third of these is unrepresented at Haltern<sup>71</sup> and is recognized as being of Tiberian or later date, but it appears at least three times in Well no. 1,<sup>72</sup> where the profiled rim (and *a fortiori* the hanging lip) is conspicuously absent from the evidence at present available.

38. Rasin(i). Shape: high-sided bowl. Provenance: "Building I." On bottom, a graffito: FAV.

The signature of Rasinius is common and widely distributed, although one may doubt whether all such signatures (quite apart from the late L. Rasinius Pisanus)

Dragendorff, *Bonn. Jahrb.* xcvi, 1895, pl. V, 35, which may show the same horizontal garland used both in the same position and as a festoon. On both bowls the hollows of the festoons are filled with figures, although their outlines on the Candia bowl are more than obscure. On the same bowl the dies used for the festoons bear suggestive family resemblance to those of P. Cornelius (*AJA.* xlii, 1938, pp. 506-7, with parallels) and Pantagathus Rasini (Chase, *Cat. of Arretine Pottery in the Boston Museum*, nos. 115-6, pl. XXII). Finally, for the sake of completeness, a fragment now in the Castello Sforzesco, Milan, is shown as fig. 4. It carries the same horizontal wreath as does the Candia bowl, and is doubtless of Naevian origin.

<sup>60</sup> An anchor is used on a Rhodian amphora stamp Νικάσωνος found at Carthage (Delattre, *Bull. Arch.* 1904, p. 487).

<sup>61</sup> "Wahrscheinlich PHILO oder PHILO zu lesen = Philo( ). Cf. ii, 6257, 144; x, 8056, 266; xii, 6700, 466a" (Oxé).

<sup>62</sup> VIII, Suppl. 3, 22645, 169.

<sup>63</sup> X, 8056, 266.

<sup>64</sup> XV, 5263, read as C-*HO* in *planta pedis*, but corrected from the Carthage example.

<sup>65</sup> XI, 6700, 163 (Arezzo); also at Oberaden, prior to 8 B.C. (Oxé in Albrecht, *Das Römerlager in Oberaden* i, pl. 48, 10).

<sup>66</sup> XI, 6700, 164, 482; also at Oberaden (Oxé, *op. cit.*, pl. 48, 11), but the stamp is not the same.

<sup>67</sup> XI, 6700, 481.

<sup>68</sup> XV, 5072-80 and 5470, respectively.

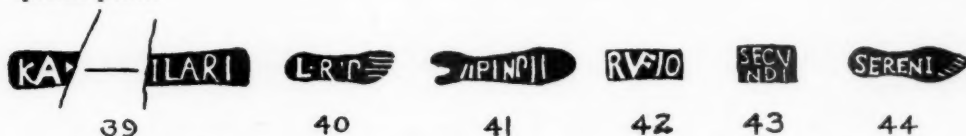
<sup>69</sup> XV, 5481 and *MAAR.* vii, 1929, p. 207.

<sup>70</sup> XI, 6700, 510 and 518, six examples in all.

<sup>71</sup> Loeschke's types 5a and 5b, illustrated in *Mitt. aus Westfalen* ii, 1901, fig. 13, 1. 3, and v, 1909, fig. 2, 9, 10, Pl. X, are rare at Haltern, and are not really the developed form anyway.

<sup>72</sup> Nos. 28 (*C. Mer*( )) and 49 (illegible). The equivalent of a fourth instance is provided by fig. 1, 8, signed by Cn. Ateius Arretinus who also signed a plate in Well no. 1.

represent the same man; at Fréjus appears an enigmatic OF RASIN.<sup>73</sup> He was a genuine Arretine, working chiefly in the principate of Augustus, but also using the *planta pedis*.



39. H|ILARI RA|SINI or RA|SINI MEMMI. Shape: fig. 7, p. 321, and fig. 1, 4. Provenance: undated fill north of Temple A.

Dr. Oxé has been kind enough to provide the solution of the signature, which carries with it an Augustan date and an Arretine origin. The shape is unusual and the decoration has elements of novelty to which I know of no precise parallels. The arrangement of leaves on the lower zone has an interesting counterpart from the shop of Rasinius in Chase, *Catalogue of the Loeb Collection*, pl. xxiii, 427; the element thus imbricated recurs as a bow-knot in Oxé, *Arret. Reliefgefäße vom Rhein*, pl. xlix, 186, of which Oxé's attribution to the circle of Rasinius is thereby confirmed.

40. L. R( ) P( ). Shape: small cup. Provenance: south foundation vault of Temple L.

Signatures of L. Rasinius Pisanus (cf. the following number) are frequent; references to those in *CIL*. are collected in *MAAR*. vii, 1929, pp. 208 f.; add ii, 4972, 69, LRPIC. But the stamp and the description of the present vase suggest that the potter may be L. Rast(icianus) Pre( ) of Arezzo<sup>74</sup> rather than L. Rasinius Pisanus. Doubtless a number of abbreviated signatures like the present instance have been tacitly and wrongly attributed to Pisanus. Further confusion has arisen in the past through the attribution of certain Augustan decorated sherds to Rasinius Pisanus, who was not strictly Arretine and whose activity was principally under Nero and the Flavians. The expansion of our signature temporarily remains an open question.

41. L. R|asini Pis(ani). Shape: large flat plate. Provenance: scene of Theatre. "Surface of clay badly chipped" (Johnson).

For the name, see the preceding; he is also related to Sex. M( ) F( ), no. 22 above, *q.v.*

42. Rufio. Shape: small high-sided bowl. Provenance: unrecorded.

This potter worked at Pozzuoli.<sup>75</sup> A stamp from Oberaden, very similar to ours, is datable prior to 8 B.C.<sup>76</sup> He exported to Rome, Spain, Africa, and Narbonese Gaul under Augustus.

43. Secundi. Shape: unrecoverable. Provenance: scene of Theatre.

The 37 examples of this signature from Pozzuoli betray its origin; <sup>77</sup> ii, 4970, 463c, is probably the same, but other entries under that number are partly or entirely Gaulish. Thirteen examples from Rome show varying styles of stamp.<sup>78</sup> An inter-

<sup>73</sup> XII, 5686, 738a; cf. ii, 4970, 421m.n.

<sup>74</sup> XI, 6700, 555, five examples in *planta pedis*; xi, 2<sup>a</sup> (Add.), p. 1411, examples from Spalato; xv, 5517, seven examples from Rome.

<sup>75</sup> X, 8056, 306.

<sup>76</sup> Oxé, in Albrecht, *Das Römerlager in Oberaden* i, p. 52, where parallels and discussion are given.

<sup>77</sup> X, 8056, 323; only two examples in xi, 6700, 605, *Secu|ndi* from Rimini; *Sec|und*, presumably from Arezzo.

<sup>78</sup> XV, 5560.

esting field of study is suggested by signatures like this which consist of a single cognomen, presumably of servile origin, written in two lines in a rectangular stamp; cf. no. 17 above, and such stamps as *Prilmus, Felix*, etc.

44. **Sereni**. Shape: fig. 1, 2; original lip diam., ca. 14.3 cm.; ht., 4.2 cm. Provenance: Well no. 1.

The name occurs twice at Tarragona, nearly seventy times at Pozzuoli, of which ten are *in corona* and the remainder are undescribed, and four times at Rome *coronae inscriptum*.<sup>79</sup> A plate signed *Sereni*, in Berlin, is illustrated in fig. 8.<sup>80</sup> Serenus was a potter of Pozzuoli, but he may not have been identical with the productive Q. Pompeius Serenus who also worked there. Since round stamps evidently precede the *planta pedis*, the Minturnae bowl is one of Serenus' later products—assuming the identity of all *Sereni*. The stylistic feeling of the stamp is very close to that of *Hermeisci* (no. 14 above) from the same well. I know of no good parallels to the shape: the nearest is from Tomb 153 at Ornavasso, signed L.MVR in a rectangle, and found with another shape which looks early and which leads one to question the evidential value of the Vespasianic coin found in the same tomb.<sup>81</sup>

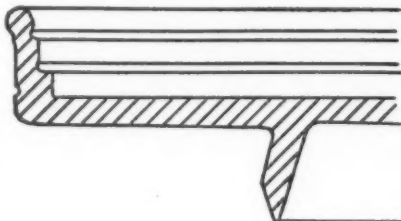


FIG. 8.—PLATE BY SERENUS IN BERLIN



45. **Q. Serto(ri)**. Shape: flat plate. Provenance: disturbed stratification along north flank of Temple A.

There were two Sertorii, Caius and Quintus; sometimes also the praenomen was omitted. Quintus is found at Arezzo and Rome, as well as at Carthage, Sousse and Leptis Minor.<sup>82</sup> He favored the *planta pedis*, but examples in a rectangle are known.

46. **A. Sest(i) Dama**. Shape: very large flat plate. Provenance: "Building I."

The stamps are on the outer circle of the inside bottom, a form of signature which places them among the earliest Arretine, 20–0 B.C.<sup>83</sup> Sestius had other slaves who occur occasionally; he himself is found in Southern France, the Rhineland, Spain and the Near East.

47. **Vital(is)**. Shape: flat plate. Provenance: late fill north of Temple B.

Vitalis was a very prolific potter of La Graufesenque in Southern Gaul in the period Claudius-Domitian.<sup>84</sup>

<sup>79</sup> II, 4970, 475; x, 8056, 327; xv, 5570, respectively. Iliffe, *QDAP*, vi, 1936, p. 46, *Sere|ni* (Alexandria) seems to be the same man.

<sup>80</sup> Altes Museum, Inv. no. TC 1445, from a sketch *ad nat*.

<sup>81</sup> Bianchetti, *Atti della Soc. di Arch. e Belle Arti di Torino* vi, 1895, p. 74.

<sup>82</sup> XI, 6700, 623; xv, 5576; viii, Suppl. 3, 22645, 345, respectively.

<sup>83</sup> Oxé, cited in *AJA*, xxxiii, 1929, p. 497.

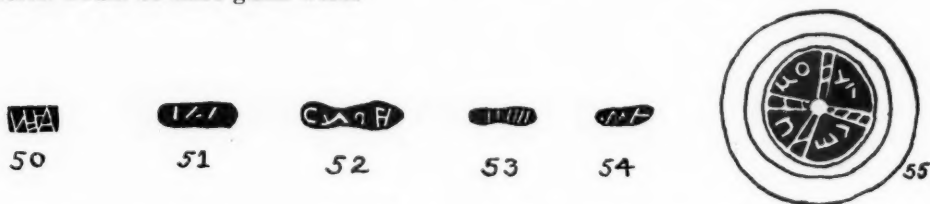
<sup>84</sup> Oswald, *Index of Potters' Stamps*, pp. 340 ff.

48. Shape: medium-sized flat plate. Provenance: disturbed stratification north of Temple A.

The stamp might read QFA if necessary (Johnson), but the most attractive identification is QAF, which exists at Arezzo, at Rome, and in Spain.<sup>85</sup> The signature is sometimes found on *black sigillata*, and is hence very early. But this reading remains speculative, pending further examination.

49. Shape: fig. 1, 10. Provenance: Well no. 1.

Even with the advantage of a dated context, any expansion of this seal as rendered would be mere guess-work.



50. Illegible. Shape: unrecoverable. Provenance: disturbed stratification along north flank of Temple A.

51. Illegible. Shape: unrecoverable. Provenance: Imperial fill between northwest corner of Temple E (Capitolium) and Stoa.

52. Illegible. Shape: unrecoverable. Provenance: Pentagonal Tower (no. 2) of north colony wall.

53. Illegible. Shape: fig. 1, 6; cf. no. 12 above. Provenance: Well no. 1.

The milled moulding may be found on Dragendorff 24/25 (cf. Loeschcke's type 12) with which this has affinities, but it is not as well marked as that of the following number.

54. Illegible. Shape: fig. 1, 3; lip diam., 13.7 cm.; ht., 6.7 cm. Provenance: Well no. 1.

The herring-bone (lower) moulding is interesting in comparison with the more elaborated *Arret. Reliefgefässe vom Rhein*, pl. xxvii, 117 (*M. Perennius Tigranus*); it also resembles in its position and in other ways *ibid.*, pl. xvii, 73. 74 (*Cn. Ateius Xanthus*).

On the date and shapes of this and the preceding numbers, see below.

55. Illegible. Shape: flat plate. Provenance: Twelfth arcade of the Theatre.

This late plate is included for completeness, but the clay, red surface, and stamp are quite different from any of the conventional categories of sigillata.

\* \* \* \* \*

Of the sites where the foregoing signatures were found, only Well no. 1 north of Temple B bears any definite reciprocal relationship to the chronology of Italian sigillata.<sup>86</sup> Since wells in the civic center of town<sup>87</sup> would have become obsolete and filled up especially promptly after the delivery of a good supply of water by up-to-

<sup>85</sup> XI, 6700, 12, xv, 4937, ii, 4970, 11, respectively. Add Cazurro, *Anuari de l'Inst. d'Estud. Catalans*, 1909-10, p. 315, fig. 10.

<sup>86</sup> In the preparation of the following paragraphs, the 1931-32 excavation journal has not been available.

<sup>87</sup> So Johnson, *Excavations at Minturnae* i, pp. 5-6.

date means, this well is intimately connected with the date of the aqueduct and the Theatre, which show identical techniques of construction. Johnson<sup>88</sup> concurs with H. C. Butler<sup>89</sup> in assigning these latter monuments "to the later reign of Augustus" or "to the first two decades of the Christian era," in conjunction with the establishment of a veteran colony on land near Minturnae. The fill of the well is unstratified and apparently contemporaneous with itself,<sup>90</sup> and in a rough way the sigillata corroborates the non-ceramic evidence of date for the aqueduct and Theatre. The two unknown quantities accounting for this "roughness" of chronological corroboration are first, the extent of the lag between the building of the aqueduct and the disuse of the well, and secondly, the pace at which certain characteristics of sigillata signatures and shapes developed. If the intervals of both were short, then the aqueduct has been dated too early and should be dissociated from an Augustan colony of veterans. At any rate, the twelve signatures from the well are: *Cn. Atei* (no. 4 above), *Cn. At(ei) A(rretini)* or *A(mandi)* (10), *Hermeisci* (14), *V.L.C.* (21), *C. Mer* ( ) (28), *PHO* (34. 35), *L.R.C.* (37), *Sereni* (44), and the undeciphered 49, 53, and 54. Of these twelve, only *Cn. Atei* is in a rectangle; six are in well-formed *plantae pedis*,<sup>91</sup> four more are in variants of the same which may have been more convincing before water, earth and debris defaced them,<sup>92</sup> and no. 49 verges toward an ellipse. It is the overwhelming proportion of *solea* stamps and the general impression gathered from the vase-shapes as noted below which make it possible to propose as the date of this well and of the effects of the construction of the aqueduct and Theatre (the "effects" being distinguished from the construction itself) the approximate decade A.D. 15–20/25—perhaps later rather than earlier therein. This date also serves to correct certain previous misapprehensions regarding the chronology of two or three of the names represented.

None of the legible stamps in this group is necessarily from Arezzo. Two of them (*Hermeisci* and *Sereni*) are definitely from Pozzuoli and bear a striking stylistic resemblance to each other; five more<sup>93</sup> are probably from Campania somewhere, perhaps also Pozzuoli; one other (*Cn. Atei*) is non-Arretine; and *C. Mer* ( ) and *L.R.C.* are unattested for Arezzo, although their distribution makes such an origin possible. That is, in the decade under consideration the Puteolan, or at least the Campanian, trade had very largely captured the ceramic market of Minturnae away from Arretium.

Within the limits of the evidence presented, it is interesting to observe the absence from this well, and from Minturnae generally, of Puteolan names inscribed within a wreath, or in rectangles with borders of pearls at top and bottom or on all four sides. The former style, which often includes a master's and a slave's name, is quite common and is apparently classic Augustan, while the latter was often used for cognomina (of slaves or freemen?) alone, and seems to have been contemporary

<sup>88</sup> *Op. cit.* pp. 6, 9, 62–3.

<sup>89</sup> *AJA.* v, 1901, p. 188.

<sup>90</sup> But the well lies outside the Republican Forum discussed by Johnson, *op. cit.*, so that precise data must be awaited from the Italian collaborators.

<sup>91</sup> *Cn. At(ei) A* ( ), *Hermeisci*, *V.L.C.*, *C. Mer* ( ), *L.R.C.* and *Sereni*.

<sup>92</sup> *PHO* (both examples) and nos. 53 and 54.

<sup>93</sup> *Cn. At(ei) A* ( ), *PHO* (both examples), *V.L.C.* and no. 49.

or slightly later.<sup>94</sup> But Minturnae seems not to have drawn much from Pozzuoli during the period of these stamps and, *vice versa*, these stamps seem not to have persisted until the Campanian ceramic ascendancy in Minturnae as represented in Well no. 1.

We have already considered under their respective entries the six shapes of vases reproduced from this well, viz. fig. 1, 2 (*Sereni*); 3 (illegible no. 54); 6 (illegible no. 53); 9 (*C. Mer*( )); 10 (illegible no. 49), and fig. 6 (*L.R.C.*). Further, fig. 1, 8 (*Cn. Ate(i) Ar(retini)*, no. 8 in our list) bears the same, or at worst a contemporary, signature as *Cn. At(ei) A*( ) (no. 10) from the same well, and fig. 1, 7 (*CA*, no. 12) reproduces the shape of the illegible fig. 1, 6 (no. 53 in our list, from Well no. 1), so that these two parallels may properly be considered with the vase-forms from the well itself. Suffice it to summarize here by observing that the plates are of considerable significance in dating the well, while on the other hand, the well dates the other less common shapes. Once more we draw attention to the value of a detailed future study of the anepigraphic ceramic context of this unique concentration of early Tiberian evidence.

*The Pentagonal Tower (no. 2) of the north Colony Wall.*<sup>95</sup> The stratification on the exterior of the Pentagonal Tower showed an original lowest layer of clean earth into which the tower had been sunk. Above this was a stratum of 20 cm. "particularly rich in Arretine pottery," none of which is included in this publication. Above this, for 80 cm., was a stratum of earth, amphora-handles, roof-tiles, glass and Campanian pottery, i.e. this layer represents a dump outside the colony wall to which was brought rubbish already of some antiquity. These two strata seem reasonably distinct, although there is some intrusion from the lower stratum into the upper. These intrusions include the signatures *Cn. Ate(i)* (6), *Iun(i)* (20), *Sex. M. F.* (22), and one other not reproduced. From slightly lower in the same layer came the decorated fragments of N. Naevius Hilarus (30) and others "with decorations in relief (rosettes, sea-horse)." Still lower, properly in the lower layer, were "fragments of Arretine ware, two of which with stamps," presumably *CA* (12) and the illegible 52. Further, *Cn. Ate(i) Ar(retini)* (8) came from the same area. Mixed in with these were two Republican coins. The signatures may be chronologically arranged *N.N.H.* (late Augustan or perhaps early Tiberian), accompanied by *Iun(i)*, after which follow *Cn. Ate(i)* and *Cn. Ate(i) Ar(retini)*. Morphologically *CA* is contemporary with these latter, and nothing prevents attribution of no. 52 to the same period. Thus *Sex. M. F.* in a crescent ("very large bowl") is the only definitely late sigillata in the rubbish strata outside the Pentagonal Tower, and it may be assignable to the later layer rather than to the earlier.

As in Well no. 1, there is nothing definitely assignable to strictly Arretine manufacture.

The dump in the *South Foundation Vault of Temple L* yielded *Cn. Ate(i)* (7), *Sex. M. F.* (23), *C.M.R.* (24), and *L.R.P.* (40). All are post-Augustan (*in planta pedis*). Either of the two last might be Arretine, while the other two are certainly from elsewhere in Italy.

<sup>94</sup> Quite a number of these pearl-bordered stamps are in the Altes Museum, Berlin.

<sup>95</sup> For several of the following paragraphs I have had the 1933 excavation journal at my disposal.

"Shops I" produced two genuine Arretine signatures, *Rasin(i)* and *A. Sest(i) Dama* (38 and 46). Both are probably of the last two decades B.C., and though their context may make them meaningless, they are in striking agreement.

Signatures from the late fill north of Temple B, i.e. between the temple and the colony wall,<sup>96</sup> and from the undated fill north of Temple A,<sup>97</sup> and from the area between the Capitolium (Temple E) and the Stoa<sup>98</sup> are of no chronological significance for the immediate sites.

In the Theatre several signatures and other fragments were found, viz. in the "west salon,"<sup>99</sup> at the end of the scene nearby "many small fragments of Arretine ware" apparently including the signatures *L. Rasinius Pisanus* (41) and *Secundi* (43); in the thirteenth Arcade several fragments including *Hilario* (17); and in the thirteenth Arcade the post-Arretine circular stamp (55). None of these bears any recognizable chronological relation to the site, which we have noted above in connection with Well no. 1.

Finally, we glance comprehensively at the evidence for the places of manufacture of the fragments from Minturnae. It is not easy to be precise in details; but, assuming the correctness of our readings and expansions, *Salvius Sex. Ann(i)* (1), *P. Hert(ori)* (15. 16), *C. Mem(mi)* (27), *Prot(i)* (36), *Rasin(i)* (38), *Hilari Rasini* (39), *Q. Serto(ri)* (45), *A. Sest(i) Dama* (46), certainly come from Arezzo, and it is probable that *C. Mer( )* (28), *L.R.C.* (37) and *Q* (48) are from the same source. If *L.R.P.* represents *L. Rast( ) Pre( )*, the total from Arezzo may be thirteen pieces. Five of these are in rectangles,<sup>100</sup> three are in more or less rounded forms of the same, and four are *in planta pedis*.<sup>101</sup> The larger part of importation from Arezzo to Minturnae occurred in the principate of Augustus, though it did not cease immediately thereafter. From Pozzuoli certainly come *Hermeisci* (14), *Iuli* (19), *N.N.H.* (30), *Rufio* (42), *Secundi* (43) and *Sereni* (44), and perhaps also *Hilarus* (18)—seven in all. Two are in a rectangle, two in circles, and two *in planta pedis*.<sup>102</sup> Importation from Pozzuoli may go back to Augustus' time, and we have seen that early in Tiberius' principate it had definitely overshadowed Arretine competition. This becomes the more evident if one considers the signatures which may not be from Pozzuoli itself, but which are apparently from somewhere in Campania,<sup>103</sup> viz. *Cn. Ateius Arretinus* (8-10), *Hilario* (17), *PHO* (34. 35), and *V.L.C.* (21), all except one of which are *in planta pedis*. Furthermore, both Arretine and Campanian signatures would be increased by more exact data on the provenance of the illegible signatures and of *Ateius* (3-7), *CA* (12), *Iun(i)* (20), *MEI* (26), *Sex. M. Fes( )* (22. 23) and *Sex. Mu(rrius?) Pi(sanus?)* (29). But, in general,

<sup>96</sup> *Ardac(i)* (2), *C. Malius Fortunatus* (25), *C.P.P.* (32), and *Vital(is)* (47).

<sup>97</sup> *Salvius Sex. Ann(i)* (1) and *Hilari Rasini* (39).

<sup>98</sup> *Gal(li)* (13), *C. Mem(mi)* (27), *Sex. Mu(rrius?) Pi(sani?)* (29) and the illegible 51.

<sup>99</sup> *Atei* (3), *Hilarus* (18).

<sup>100</sup> *Hilari Rasini*, being an exterior signature on decorated ware, is disregarded in the count.

<sup>101</sup> Moreover, *CAN* (11) and *Gal(li)* (13), both *in planta pedis*, *C. Malius Fortunatus* (25) in a circle, and *C.P.P.* (31, 32) in rectangles, though perhaps not from Arezzo, were probably made somewhere north of Rome.

<sup>102</sup> *N.N.H. in tabella ansata*, being an exterior signature on decorated ware, is omitted from the count.

<sup>103</sup> Cf. the second footnote of this article.

and subject to the modification of future publications, the proportion of Arretine and Campanian signatures shows at first a participation in the Empire-wide consumption of Augustan pottery made at Arezzo and other northern sites; second, a preference for Puteolan and other Campanian wares commencing rather late under Augustus <sup>104</sup> and growing strong under Tiberius (stronger, for instance, than at Rome); and third, the introduction or penetration of some Gaulish ware under Claudius-Nero, accompanied or followed by late Italian sigillata made later than A.D. 79 at some undetermined center or centers in Italy.

HOWARD COMFORT

HAVERFORD COLLEGE

<sup>104</sup> One must confess some surprise that the earlier Puteolan products are represented at Minturnae by only one clear instance (*Rufio*, no. 24); in other quarters and at an early time they were rather widespread in substantial quantities.

ARCHAEOLOGICAL NEWS AND DISCUSSIONS  
NOTES ON RECENT ARCHAEOLOGICAL EXCAVATIONS  
SUMMARIES OF ORIGINAL ARTICLES CHIEFLY IN  
CURRENT PUBLICATIONS

STEPHEN B. LUCE, *Editor-in-Charge*

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NECROLOGY

**Nikolaos M. Balanos.**—On September 22, 1942, NIKOLAOS M. BALANOS, former Director of the Technical Service of the Greek Ministry of Public Instruction, died at Athens, Greece, at the age of eighty-three. More than half of his life had been devoted to the restoration and consolidation of the monuments of the Athenian Acropolis. He was first entrusted with this work after the earthquake of 1895 had caused such dilapidation in the Parthenon that an international commission, representing France, Great Britain and Germany, was appointed to study the problem of repair. The work of consolidation was very carefully executed by Balanos, who laid down certain axioms of which time has attested the validity, particularly that no restoration should be done beyond what is strictly necessary to permit the insertion of existing pieces, and that all restoration should be in the material and in the technique of the ancient structure, though avoiding any pretense of being part of the original fabric. In carrying out these processes he trained a group of marble cutters whose products almost vie in excellence with those of their Periclean predecessors. Toward the end of his career, however, the possibilities of reinforced concrete so interested Balanos that he abandoned one of his basic principles, the utilization of the same sort of material (Pentelic marble) that was employed in antiquity; this substitution found its supporters, while many others regarded it as unfortunate.

Perhaps it was symbolic that the timber employed in all this work on the Acropolis was specially imported for this purpose from America. For, throughout his career, Dr. Balanos has been closely associated with American scholars, whom he kindly permitted to utilize the facilities for study which the scaffolding, the dismemberment, and reassembling of parts of the buildings for the first time made available. While the Parthenon was thus accessible, Ebersole studied the west metope sculptures. After this work was concluded

in 1903, the reconstruction of the Erechtheion was begun, and through the enterprise of the American School's Director of that period, T. W. Heermance, a fellow in architecture was appointed to the School to accompany the work of reconstruction. The eventual studies of this first appointee, Gorham P. Stevens, were embodied in the American School monograph, *The Erechtheum*, in 1927. The subsequent architectural fellows and architects in the American School all owed great debts to the co-operation of Balanos, particularly in the work on the Propylaia in 1909-1917, the north colonnade of the Parthenon in 1922-1929, and the Temple of Athena Nike in 1935-1939. Practically all of this work was carried out by means of funds supplied by the Greek Government, but when the reconstruction of the north colonnade of the Parthenon proved to be too expensive for the budget of the Ministry of Public Instruction, eight Americans under the leadership of the late John H. Finley assumed the financial responsibility for raising the eight north columns overthrown by a German artilleryman under Italian leadership in 1687.

The Acropolis will ever bear testimony to the unremitting care and skill shown by Nikolaos Balanos and his assistants. The monuments themselves must speak for him. His bibliography is comparatively slight: his routine reports in the *Praktika* and the *Archaïologikon Deltion* often contain acute observations, but more important are his papers in the *Comptes rendus* of the French Academy. One final monograph, *Les Monuments de l'Acropole* (Paris, 1938), is a very valuable and detailed study of the construction of the Parthenon.

W. B. D.

**John Carew Rolfe.**—Nobody who had enjoyed such a lifetime of affectionate intimacy with Professor JOHN CAREW ROLFE and his family as was the writer's privilege could compose the merely statistical obituary that limitation of space so often prompts. Many readers of this JOURNAL know already that Rolfe attained a national and international reputation as a sound scholar who

forwarded learning by many technical papers, bettered pedagogy by composing and editing numerous text-books, helped to train for the degree of Doctor of Philosophy in the Classics many men and women during more than half a century of teaching, and translated for the Loeb Series important Latin authors with a grace and skill that won him a wide reading public among cultured laymen. As a son of the eminent Shakespearean scholar, William J. Rolfe, he might have been expected to continue through life, as he did, a deep interest in the great dramatist and also to emphasize in his teaching of Latin the literary point of view. But this was only one aspect of his work. As a student at the American School of Classical Studies at Athens in 1888-1889, he conceived an interest in archaeology and in the excavation of ancient sites that he never lost. To his teaching of graduate courses in that subject he brought also the inspiration of two terms of professorial service at the American Academy in Rome. In recognition of this and of his love and sympathetic appreciation of Italy, the government of that country conferred on him the title of *Commendatore*. He continued his services to the Academy as one of its trustees in New York, and attended the meetings of the board with fidelity and an especial pleasure even into old age.

From the University of Pennsylvania and from Oberlin Professor Rolfe received his honorary Litt.D. As a graduate of Harvard (A.B. 1881) and during 1889-1890, an instructor there in Greek and Latin, as a doctor of philosophy of Cornell University and for some years a member of its faculty, and then as professor of Latin at the University of Michigan from 1890-1902, he formed many ties of warm friendship to which he remained characteristically loyal during his long career as head of the Latin Department of the University of Pennsylvania. After he became Professor Emeritus in 1932, he continued as a Lecturer there for another five years. He died at Alexandria, Virginia, March 26, 1943 at the age of eighty-three.

These bald succinct statements do not, of course, picture adequately his career. He attended regularly the annual meetings of the American Philosophical Society of which he was a valued member. His election to the presidency of the American Philological Association and to other high professional positions was natural both because of his wide reputation as a scholar and because all who knew him admired him as a man,

and trusted his good judgment and fairness as an administrator and executive. He continued in intellectual and physical activity to the very end of life and exemplified during an unusually long career a scholar's ideal of wide and profound learning, sound worldly wisdom, gentle manners and noble character. WALTON BROOKS MCDANIEL

Sidney Norton Deane died at Northampton, Massachusetts, on May 4, 1943, in the sixty-fifth year of his age. Born in Westmoreland, N. Y., on June 10, 1878, he was graduated from Yale University in the Class of 1902. After two years of graduate study at Yale, he spent the year 1904-05 as a student at the American School of Classical Studies at Athens. On his return to the United States, he went to the Museum of Fine Arts in Boston where he spent the next three years, as Assistant Curator of Classical Antiquities. In the academic year 1908-09 he pursued further graduate study at the University of Bonn, after which he returned to Boston for three more years at the Museum of Fine Arts, becoming Secretary to the Director from 1910 till 1912. In 1912 he was called to Smith College, where he spent the remainder of his life, as Associate Professor of Greek from 1912 to 1914, and from 1914 (in which year he received his Ph.D. degree from Yale) as Professor. He was also Curator of the Smith College Museum of Classical Art and Archaeology, and, since December 1942, Acting Librarian.

Sidney Deane's connection with the Archaeological Institute of America, and with this JOURNAL, was long and unselfish. A member of its Boston Society, he was active for many years in the affairs of the Institute, serving several terms on the Council, but it is in connection with this JOURNAL that his services will best be remembered. From 1920 through 1924, he was Editor-in-Charge of the Department of News and Discussions, and thereafter was a valued and faithful contributor of abstracts from foreign periodicals and publications.

The School at Athens was also an abiding passion with Sidney Deane, and his loyalty to its interests was profound and unwavering. For years he was the Chairman of its Committee on Fellowships, and responsible for the preparation, and subsequent correction, of the examinations to be taken by candidates. In his later life, he was able several times to revisit Greece—always a great satisfaction to him, and to those who saw him there.

He never married, but in lieu of descendants he

leaves a host of devoted friends and pupils, who will never forget him, and who deeply and sincerely mourn his passing.

S. B. L.

### GENERAL AND MISCELLANEOUS

**Evolution of Nations.**—*Smithsonian Institution, War Background Studies*, no. 2, 1942 (23 pp.) is devoted to an essay on this subject by JOHN R. SWANTON. In the beginning of the article he states the common and erroneous belief that tribes and nations arose in "a manner suggestive of the immutable species of the older biologists—through divine or through natural determination." Beginning with the Indian tribes of the Western Hemisphere, he points out that the problem is far more complicated. Governmental unity may or may not be present—identity of physical type is not trustworthy, for while in physical characteristics the New England Indians are like the Iroquois, their language and culture are entirely different. Other tribes are of the same linguistic stock, but of entirely different physical type. Cultural separation of tribes likewise cannot be too strictly adhered to; in certain cases members of the same tribe speak different languages. The tribe would therefore appear to arise from political or economic considerations, and from such origins arose confederations of tribes for the common good, or empires like those of the Aztecs or Incas. "In short, there is no one universally valid principle identifying a body of people as a tribe."

In turning to the evolution of nations, "we find again a total lack of any one unifying principle, or set of principles, that would lend color to the dogma of an immutability in their number or their constitution." To illustrate this, he devotes a long section (pp. 4-8) to the ancient world, showing the evolution of Egypt, and the different racial elements that made up the kingdom of the Pharaohs during its long history. The same principle is then applied to Mesopotamia, Persia, the Hittite empire, Palestine and Syria, Phoenicia, and the Aegean area. Finally he takes up the evolution of the Greek city-state civilization, and the Roman Empire with its vastly heterogeneous elements.

Pages 8-19 are devoted to modern nations, particularly those of Western Europe, taken up in the following order: Italy, France, Spain, Great Britain, Germany, the states of Southeastern Europe, Russia, Poland, the Scandinavian countries, the Netherlands, and Belgium. He then considers the United States, China, Korea, Japan, and India. In

all of these nations the evolution, through heterogeneous elements, brought together by political or economic considerations, or those of self-defense, is clearly established and briefly described.

The remainder of the article is devoted to the Bases of National Life. These stem from two sources: the aggregation of smaller units (1) by voluntary consent, as in Switzerland or the United States, or (2) by compulsion, as in the empires of the ancient Orient, Rome, or the Aztecs. States which have attained national consciousness tend to enter on a career of conquest, and become empires. Three other factors appear, the racial, the geographical, and the linguistic. The racial factor is often confounded with nationality, but this is erroneous, as modern nations are composed of a number of racial amalgamations, nor is any one race confined to any one nation. Geography is, however, one of the primary determinants of nationality, but other factors have to be taken, even here, into consideration. The most important national determinant is that of language, but even it is not altogether trustworthy. The conclusion is reached that "the only justification of any government is the benefits it confers upon the governed," and that can best be achieved by voluntary mutual consent, rather than by force. The United States on this basis is claimed as the most perfect example of national evolution.

**Photography in Archaeology.**—HARRIET HALPER contributes to *Classical Outlook* xx, pp. 56-58 (2 figs.) an article emphasizing the importance of photographs in teaching the Classics, and suggesting useful ways of instructing students to use the camera in recording finds. During the war the suggestion is made that, wherever available, classes should study the aboriginal remains of the United States, and photograph them. Modern cameras, films, and other photographic apparatus are described, and their capabilities and limitations explained. Valuable hints are given for the preservation and proper filing of photographic material. "The future of photography may have a very real effect upon the future of archaeology."

**Exhibition at Oxford.**—The Ashmolean Museum at Oxford has recently placed on exhibition a collection of articles and photographs of excavations conducted from 1919 to 1939, taken from the reports in the *Illustrated London News* (ILN, Feb. 20, 1943, p. 216).

**Riza-i-Abbasi.**—This Persian painter, the leading genius of the art of Iran in the seventeenth century, and director of the academy of painting

at Ispahan, founded by Shah Abbas (1587-1628) is well represented in Detroit. ADÈLE C. WEIBEL, in *Bull. Detroit Inst. Arts* xxii, pp. 3-7 (4 figs.), publishes three of his works: a design on silk of a young man drinking wine, in the Detroit Institute of Arts; a portrait of a Portuguese youth with a dog, in the collection of Dr. W. R. Valentiner; and a portrait of a lady in a private collection in Detroit, bearing a strong resemblance to that of a young man in the Bibliothèque Nationale in Paris. The portrait of a woman has been previously published as "lost," so its location is of value to scholars.

#### EGYPT

**Ankh-haf in Modern Dress.**—DOWS DUNHAM, in *BMFA*, xli, 1943, p. 10 (2 figs.), briefly discusses an experiment made in the Museum of Fine Arts in Boston. When the famous Fourth Dynasty bust of Ankh-haf was withdrawn from exhibition to be deposited in safe-keeping for the duration of the war, casts were made for exhibition purposes. One of these casts was tinted in flesh tones, and eyes, eyebrows and hair colored. It was then dressed in modern clothes, with striking results. "One is struck with the modernity of the face, which might be met with any day on the street. There is nothing in it to indicate its ancient Egyptian source. The experiment . . . actually has a serious value. It serves to bring out the absence of convention in certain of the great works of the ancient masters, and adds weight to the conviction that the best works of portraiture were real physical likenesses of actual people." From the dress, one may assume that Ankh-haf stood about six feet high, and weighed about 160 pounds.

**Late Saite Statue.**—In *Bull. Univ. Mus.* ix, no. 4, 1942, pp. 13-17, pl. IV, HERMANN RANKE publishes a statue acquired by the University Museum in 1941. It is of black basalt, and represents a kneeling man, holding a shrine of Osiris. The base and back pillar of the statue and the shrine are covered with inscriptions, revealing the statue to be that of a certain Psamtik-si-Neith, an official of the usurper Amasis of the twenty-sixth dynasty, who reigned from 569 to 525 B.C. That he was an important figure of the period and a staunch supporter of Amasis is shown by the inscription, which also specifies that the statue was to be placed in the sanctuary of Neith at Sais "on the eastern side, opposite the Mother of the God." He was not a priest, but was in charge of all building

work at Sais, although this does not necessarily mean that he was a trained architect. Nor was he of an aristocratic family, and he may not have come from Sais but from Upper Egypt. The inscription shows him to be a favorite of Amasis, and at the same time a supporter of the underprivileged, and generous to the poor and the sick. An approximate date of 550 B.C. is suggested, as the inscription implies that he predeceased Amasis.

#### MESOPOTAMIA

**Sumerian Tomb.**—In *ILN*, Feb. 20, 1943, p. 217, is published a photograph and explanatory drawing of the burial of a Sumerian woman, who died about 2800 B.C., found in a cemetery adjoining the "Painted Temple" at Tell 'Ugair (illustrated) and now in the Iraq Museum at Baghdad. The burial is rich in personal adornments and vessels of pottery and copper. The suggestion is made that the woman died while on the point of giving birth to a child, for a miniature pot was found, as if for the infant's nourishment.

**The Parthian Temple.**—In *Berytus* vii, 1942, pp. 1-18, CLARK HOPKINS makes a survey of those temples which may safely be ascribed to the Parthians. Despite inadequate evidence and the necessity of allowing for occasional modifications of form through strong local influence (as when the orientation is changed from South to East), certain facts now seem fairly clear. Hopkins summarizes the line of development as follows: "the Achaemenid temple was from an early period the square building with four interior columns, flat roof, and enclosed ambularium. The Parthians introduced engaged columns, blind and open arches, the less enclosed ambularium, the room without interior supports, and gradually the vault. Here and there, however, the columned temple remained, as it did in the Hauran. . . . The Parthians at the end of the Arsacid epoch returned to the room with interior supports, but now vaulted the roof. The Sassanians introduced the cupola in their temples as they did in their palaces, and supported the roof on four piers."

The square temples of the Hauran with four interior supports are a special problem (the earliest is that of Baal Shamin at Si, dated in 33 B.C.). They are generally considered Nabataean, and the prototype of the Persian-Parthian temple. In fact, they are far closer in form to the Achaemenid temple of Susa than to the contemporary structures of Warka and Seleucia. Contrary to the usual assumption, the line of influence appears, for

this and other reasons, to have been from East to West.

**Synagogue at Dura.**—In the season of 1932–33 five inscribed tiles of the Jewish synagogue at Dura were discovered. Three of the inscriptions were in Greek, and two in Aramaic, written in the so-called Square Hebrew type. The Aramaic texts were far from clear, but it was apparent that one of them (A), and the three in Greek, were building inscriptions. A sixth tile has since been found in Damascus; it bears two Aramaic inscriptions, one scratched, the other painted (C<sub>1</sub> and C<sub>2</sub>). Both are closely related to A. With some modifications, C<sub>2</sub> repeats the text of C<sub>1</sub> and adds additional material, while A repeats the text of C<sub>2</sub> with still further supplements. Each of the Greek inscriptions is independent, but of the six names which appear in them five were originally present in the Aramaic. In *Berytus* vii, 1942, pp. 89–138, JULIAN OBERMANN presents improved readings of the Aramaic texts, with full commentary, and examines the puzzling problem of the relationship of the six inscriptions which record the building of the synagogue.

Archaeological evidence reveals that the synagogue, destroyed in the siege of 256 A.D., had been rebuilt and expanded from an earlier synagogue, some of the materials of which were incorporated in the new structure. Since the Aramaic inscriptions give the date of the founding as the year 556 (= 245 A.D.), this has been accepted as the date of the second synagogue. However, the building was not completed all at one time, and the frescoes, probably the final feature, can now be definitely dated in 255 A.D. But since inscription A mentions these murals, it cannot have been set up ten years earlier. This and other difficulties make necessary a fresh correlation of the archaeological and inscriptional evidence.

Obermann offers the following reconstruction of the historical situation. In 245 the Jewish community of Dura dedicated a formal house of worship, apparently consisting of a remodeled private house, which may previously have served as an informal synagogue. To commemorate this event, inscription C<sub>1</sub> was set up. Some years later this building was replaced by a new synagogue which, though unfinished, was opened for services in about 253. A scribe piously combined the recording of the new achievement with the memory of the old by copying off the text of the graffito, on the same tile, but adding the names of those primarily responsible for the new building (C<sub>2</sub>).

Finally, when in 255 the finishing touches were put on the building, this was recorded in similar fashion, though on a separate tile, by an inscription (A) which added the names and achievements of the most recent benefactors to those of the earlier ones. Tile C was then painted over, and so escaped notice till recently.

The Greek inscriptions are probably all from the final period. In briefer form, and with some alterations (the result perhaps of hindsight), they seem to record the same three stages in the history of the synagogue. If we possessed only tile A, the composite nature of its inscription would not be apparent. Obermann suggests that other "renovation" inscriptions may likewise incorporate older legends in their texts.

#### PALESTINE AND SYRIA

**Warrior with Plumed Helmet.**—The figure of a warrior carrying a javelin and axe, and wearing a plumed helmet and short skirt or kilt appears on a number of Syro-Cappadocian cylinder seals and on two seals of the First Syrian group. The same figure is represented by several Syrian figurines in bronze, in each of which the head is executed with considerable care, while the body is treated summarily. Both stylistically and technically the figurines are closely related to the seated copper goddess from Ras Shamra and to a goddess with cylindrical headdress in the Louvre. EDITH PORADA (*Berytus* vii, 1942, pp. 57–63) dates the warrior figurines, on the basis of this complex relationship, to the nineteenth and eighteenth centuries, though without definitely excluding the seventeenth. The seals show that the warrior is a deity, but one subordinate to a superior, perhaps the supreme god. Identification with a specific divine or legendary personage has not yet been made.

#### IRAN

**Nishapur.**—CHARLES K. WILKINSON, one of the excavators of this site, discusses, in *B.M.A. N.S.* i, 1943, pp. 175–183 (15 figs.) the methods of storing water and ice in the arid regions of Iran. Irrigation was employed by diverting water from small streams into narrow ditches for cultivation purposes, while, to provide drinking water, aqueducts were constructed underground. The conduits were vaulted with brick, or lined with earthenware hoops, as is the present practice. By conducting the water underground, its coolness was assured. To reach the supply, the excavations showed that one had to descend at least thirty steps from

ground level to the source. Drinking water was brought home in pitchers and jugs of porous earthenware, which would retain the water's coolness. Similar vessels were also used for drinking. Such cups were often decorated, and sometimes inscribed. For the manufacture of ice, and its storage in hot weather, high clay walls were built, against which pans were constructed, into which water was poured, the purpose of the wall being to keep the sun's rays off the pans (a modern series of pans, at Shiraz, is illustrated to show the process) and when frozen, this ice was stored in deep pits, with straw, the pits being covered with a dome not unlike that of a beehive tomb. In such domed pits (examples at Kerman and Saadatabad are illustrated) ice would keep through hot weather, and was sold as required. This method was probably employed as early as the tenth century, for literary references to ice are frequent. For cooling iced drinks, glass tumblers and beakers were used wherever possible. Some description of such drinks as were consumed in the tenth century is given. (In Nishapur, sherbet made from rhubarb was probably the commonest). At the time of the greatness of Nishapur, Christians, Zoroastrians, and Jews, as well as Muslims, lived there, and wine was openly drunk by all creeds, and served chilled or iced. Many such glass bottles, drinking cups, jugs, or tumblers, probably of local make, were found in the campaigns at Nishapur.

#### AEGEAN

**The Façade of the Treasury of Atreus.**—D. S. ROBERTSON reports in *JHS*, lxi, 1941, pp. 14–16, letters received from A. J. B. Wace in February, March, April, 1941, which describe and illustrate with small photographs important new evidence for the reconstruction of the Treasury of Atreus, derived from fragments which came to light when the Mycenaean storeroom in the National Museum at Athens was recently cleared. The material includes "heaps of bits of the columns, of the red spiral frieze, and of the red Mycenaean triglyph frieze." In the large half columns there is new evidence for a collar with beaded edge between the column and the capital. Above the capitals were two large square plinths and on those stood two other small half columns with capitals and collars similar to those on the larger columns. In the relieving triangle Wace would now insert a plain band of red stone after every third row of triple parallel bands of spirals in red stone.

#### GREECE

##### GENERAL AND MISCELLANEOUS

**Hesiod's "Shield of Herakles."**—J. L. MYRES in *JHS*, lxi, 1941, pp. 17–38, undertakes to interpret the Hesiodic shield of Herakles by the same method he had used for the shield of Achilles (*Who Were the Greeks?*, Berkeley, 1930, pp. 517–523). He begins from the standpoint of the conception which the poet appears to have formed of what he regarded as a superb and elaborate example of a class of objects familiar to himself and his public. Materials for such a reconstruction are: (1) precise literal translation of the Greek text and close study of every detail; (2) comparison with the Homeric descriptions of the shield of Achilles, the armor of Agamemnon, of Herakles, and Pausanias' description of the chest of Kypselos; (3) comparison with the technique both of composition and execution, of early Greek bronzes, of contemporary Oriental shields, and of other engraved metal work, especially bowls of silver and bronze, found on many sites. The details indicate that the shield was plated with bronze, with other colored metal added, circular in shape, and bordered by a continuous ocean stream running around the rim. The center piece is a serpent accompanied by other symbolical figures. Beyond the wreath of snakes, which bounds the central composition, or boss, come four zones, or annular friezes, then the rim of Ocean, enhanced by skimming swans and fish. Boars, lions, variously grouped, form a simple inner first zone, followed by zone two with a familiar frieze scene, the combat of Centaurs and Lapiths. Between the Lapith-Centaur frieze and zone four, a "tale of two cities," appears zone three, a zone of independent compositions, of moderate compass, containing scenes of Ares in his chariot, with Deinos and Phobos, Athena armed and going into battle, a dance of Immortals, with Apollo playing the lyre, and Muses singing, a harbor with a fisherman on a rock, and dolphins and fishes in open sea, and Perseus pursued by the Gorgon sisters. Some six of the figures are statal, i.e. "pilaster" or separate self-contained compositions; some six scenes kinetic, frieze-like groups, the whole arranged axially in clockwise fashion, with possibly Apollo playing the lyre at XII o'clock, and other statal figures at suitable positions in the circle. The fourth zone is also a continuous composition with axial points at a city at war, and two views of a city at peace, with the marriage, music, and dance, between the latter

two, and hunting, boxing, and racing between the second city at peace and the city at war. A reconstruction of the Hesiodic shield is drawn by Miss Joan M. Laing to illustrate the text discussion.

**Animals on Greek Gems.**—The recent acquisition by the Metropolitan Museum of a number of gems from the collection of the late Sir Arthur Evans, and an additional legacy of several hundred gems received in 1941, prompts CHRISTINE ALEXANDER, in *BMA*. N.S. i, 1942, pp. 144-147 (12 figs.), to discuss briefly the forms of animal life which these intaglios portray. Animal subjects appear as early as the eighth century B.C. Perhaps the most persistent is the lion, which appears on the earliest gem to be illustrated. (Lions were known to be found in Greek lands as late as the sixth century B.C.). Almost as popular is the horse, as one might expect, and then the bull. Other animals illustrated are the wild boar, and the deer, and in bird life, the eagle and the heron. The gems illustrated extend in date to the early third century B.C.

**Classical Music.**—*CJ.* xxxviii, p. 469, gives an abstract of a recent paper by BRUNO MEINECKE. After listing a number of monumental, epigraphic, and literary sources for the various instruments used, he discusses the actual remains of ancient music that have come down to us. Two of these, fragments of ancient Greek music, he has transcribed, and made into original arrangements for violin and piano. "Our modern scales and musical principles came from the Greeks and Romans."

**The Delian Confederacy.**—FRANK R. KRAMER has an interesting article in *CJ.* xxxviii, pp. 391-400, in which he suggests a careful study of the machinery of the Delian Confederation, and its application to the present post-war problems of maintaining the peace of the world. The conditions under which it was founded were not unlike those with which the United Nations will be confronted; its imperialistic defects can be avoided by meticulous respect for the rights and problems of the different allies, while its provisions for common defense against aggression are as sound now as then.

### ARCHITECTURE

**Cost of the Parthenon.**—W. A. OLDFATHER has an article on this subject, of which an abstract appears in *CJ.* xxxviii, pp. 470-471. He estimates, on the basis of the value of money, the size of the populations, and their relative ability to pay, that the Parthenon cost, both for construction, and for

maintenance in the two decades following, about five hundred times as much as we have paid for the Library of Congress.

**Greek Gymnasium a Civic Center.**—*CJ.* xxxviii, pp. 461-462, gives an abstract of a paper by CLARENCE A. FORBES on this subject. As the gymnasium was always owned by the *polis*, and was always a building of large size, it early became available for other purposes than athletics or gymnastics. Gymnasia became centers for higher or adult education, and in some cases, libraries were attached to them. Banquets were often held in gymnasia, also judicial hearings, and they were used as places of assembly for hearing public addresses, or receiving visiting dignitaries. In some cases the funerals of distinguished citizens were held in gymnasia. In these and many other ways the gymnasium developed into a social and civic center.

### SCULPTURE

**Architectural Sculpture.**—*CJ.* xxxviii, p. 466, summarizes a paper by WALTER R. AGARD, in which he shows the different solutions to this problem offered by the Greeks. He cites the Siphnian Treasury, the Zeus Temple at Olympia, and the Parthenon, and shows that the three-dimensional style tended to prevail in later Greek art, culminating with the Altar of Zeus at Pergamon. This type continued to be favored in modern art until very recently, but today we are witnessing a return to low linear relief, such as was employed by the Greeks in the sixth century and down to the middle fifth. He cites as examples the Nebraska State Capitol, the St. Paul City Hall, and the Adler Planetarium in Chicago.

**Measurements of Zeus, Olympia.**—R. PFEIFFER in *JHS.* xli, 1941, pp. 1-5, adds to our limited knowledge of the measurements of the Zeus at Olympia by a reconstruction of evidence to be obtained from recently recovered fragments of an iambus on the Olympian Zeus composed by Callimachus, mentioned in antiquity by Strabo as giving the measurements. The pedestal of the throne has long been known as measuring 6.65 m. in breadth, and 9.67 or 9.93 m. in length, i.e. depth. The text of the iambus of Callimachus, presumably a "Propempticon" to a friend, leaving for the Peloponnese, entitled 'Ἀλκείος ὁ Ζεὺς, and written in Doric Greek, is badly mutilated. But the measurements of the height of the throne can be successfully restored to 9.90 m. on the basis of a 0.330 m. foot., and the height of the god to

12.375 m. The proportion of the throne to the statue is four to five, exactly the proportion shown on the coins of Elis. The height of the Horai and the Charites prove to have been 1.98 m. There is no reason to doubt Callimachus' statements. He may well have used an early "Periegesis" of Elis.

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proven, but through neglect these remains are now unknown. From 1860-1925 further investigations were made.

The present soundings put an end to all doubts as to this site being Roman, and prove the existence of a Roman *castellum*. Trial trenches and pits were opened, as a result of which the foundations of a building of Roman date came to light. These foundations were of local field stone, with which were fragments of brick and gravel; the building was built on piles, and associated with it was found a large black-glazed jar of Roman ware. The suggestion is made that this building was a bath-house for the garrison of the *castellum*. Other instances have been found of this custom. It is dated, on the evidence of the tiles and other objects found about it, in the neighborhood of 150 A.D. Two other trial trenches yielded some evidence for the existence of the *castellum*.

The stratification of the site, as revealed by the trial pits, shows that there were two other periods of habitation (attested by layers of ashes) below, and therefore earlier than, the Roman building. The upper level can be dated in the middle of the second century, the middle is dated by sherds in the early second century, while sherds associated with the lowest stratum date about 50-70 A.D. The earliest fortification on the site was built of wood and earth about 50 A.D.; it was destroyed by fire at the time of the revolt of the Batavi in 69, rebuilt of wood and earth not long thereafter, and in the second century once more rebuilt, this time of stone.

There is no definite evidence of any occupation before Roman times, other than some sherds of coarse ware with charcoal. The earliest object unearthed in the present campaign was a sherd of *terra sigillata*, dating in the age of Claudius. Of a period very closely akin is a bronze fibula. Coins of Vespasian and Domitian were found, and to this period (the last quarter of the first century and the beginning of the second) belong two fragments of inscribed tiles from the *tegularia transrhenana*, which, as is evidenced by finds in other sites, must have been situated either near Nijmegen, or at some other place on the right bank of the Rhine, between 70 and 105 A.D. The fragments found bear inscriptions which can be completely restored, on the basis of similar tiles found elsewhere. They bear the names of military organizations, which permit a date between 96 and 104 A.D. To the later period of the second century can be assigned two dishes of *terra sigillata*, one of

which, bearing the stamp FORTVNATVS, is East Gallic, and dated around 120, as it also has the stamp LEG. XXX, a legion created by Trajan. Other sherds are dated late in the second or in the beginning of the third century. From the same period was a fine bronze statuette of Jupiter, found in a previous investigation of the site, 0.20 m. high, and now in Utrecht. A coin, either of Gallienus (254-258) or of Claudius II (268-270) was found in this campaign, but it is likely that this may be an isolated find, and that the *castellum* was abandoned about 258/9.

The highest point of the site is east of the excavated area, in the direction of Utrecht, where an airplane photograph shows the existence of heavy foundations of a building with square rooms, perhaps the principal building of the camp, and, if so, necessarily in the center of the ancient enclosure.

The final section (pp. 195-200) is devoted to a catalogue of the objects found in this excavation—coins, bronzes, pottery of different types, including tiles and bricks, glass, etc.

**Mosaic from Daphnae.**—The City Art Museum of St. Louis has recently acquired a fragment of a large mosaic from Daphnae, suburb of Antioch-on-the-Orontes. This is published by CATHERINE FILSINGER in *Bull. City Art Mus.* xxvii, 1942, pp. 6-9 (fig.). It was excavated in the campaign of 1934, and formed part of the border decoration of one of the rooms in a villa of the fifth century of our era. Six sections are preserved (cf. *Antioch-on-the-Orontes* ii, pl. 41), of which this one in St. Louis is no. 4. It has three medallions, enclosing a pheasant, a quail, and a rabbit, with leaves and clusters of grapes. The tesserae employed are all of marble, with much red, grey and brown. The pheasant is mottled red and brown, with a green breast and grey legs; the quail has a yellow and white neck and breast, with grey and brown back and tail and reddish-orange feet; the rabbit is brown-grey in varying shades. In studying the mosaic, much use is made of the work of M. Avigad in *QDAP.* iii, 1936, p. 62 f.

#### NUMISMATICS

**Roman Coins.**—The Fogg Museum of Harvard University reports (*Bull. Fogg Mus.* x, p. 3) the gift, by Professor George Davis Chase of the University of Maine, an alumnus of Harvard in the Class of 1889, of a valuable collection of about 900 ancient coins, largely Roman. Rome adopted the silver standard about 268 B.C., and from then until the fall of the Empire, her coins are an in-

valuable source of information for her economics, religion, history and art. A description of some of the subjects shown on the coins is given, and an exhibition has been arranged, showing their importance in the study of Roman art and culture.

### EARLY CHRISTIAN

**Early Islamic and Christian Lamps.**—While it is still impossible, with the material at hand, to localize the types of lamps in use in Syria and Palestine in the early Islamic period, or to determine clearly the date of origin of the several types, four main styles of this period can be distinguished. In *Berytus* vii, 1942, pp. 64–79, FLORENCE E. DAY discusses examples of these and shows that three of the types belong to the Umayyad period (one continuing in the Abbassid period), while the fourth is Abbassid, but may also have originated in the Umayyad period. The Umayyad lamps may have inscriptions in Greek or in Arabic; one even reveals the use of a Christian mold for the upper half and of a Moslem mold for the lower. One result of the classification is the author's suggestion that the tomb at al-Bassa, which Iliffe, on the basis of a hoard of coins, dated ca. 396 A.D., should be dated, on the basis of the lamps, in the seventh or eighth centuries.

### MEDIAEVAL

**Excavations at Cluny.**—A brief but important article by K. J. CONANT in *Speculum* xvii, 1942, pp. 563–565, reports on the final excavations at Cluny in 1938 sponsored by the Mediaeval Academy of America, discusses two recent books on the Abbey, and publishes nine excellent plates of plans and restorations based on the latest studies of the church and monastery. The article is devoted chiefly to a sharp critique of the book by A. and J. Talobre, *La Construction de l'Abbaye de Cluny* (Mâcon, 1936), which had used erroneously and without authorization some of the data brought to light by the American expedition. Conant points out that the first church of the monastery is wrongly located on the Talobre plan, that the authors insist—in the face of conclusive evidence to the contrary—that the second church was unvaulted, that they accept the superseded Sagot restoration of 1839 for the apse of Cluny III (1088–1130), and that their chronology for this third church is likewise mistaken. In his discussion of the book by Joan Evans, *Romanesque Architecture of the Order of Cluny* (Cambridge, England, 1938), Conant notes that his most recent plates

will serve to correct the preliminary studies supplied to Miss Evans for her excellent publication. He adds that, though Cluny itself is represented mostly by sketch restorations in the Evans book, the author does well by the remainder of her subject in a remarkable series of 236 half-tone plates, which form an illustrated corpus of Cluniac architecture. He commends the book as a veritable encyclopaedia of Cluniac affairs, a notable and very welcome addition to the bibliography of Cluny.

**Romanesque Architecture at Tours.**—In *The Art Bulletin* xxv, 1943, pp. 1–39, CARL K. HERSEY presents a preliminary report on his study of the Church of Saint-Martin at Tours. One of the great mediaeval pilgrim churches, it suffered numerous conflagrations and rebuildings, and, since the eighteenth century, slow disintegration. The local population prevented its complete destruction when one of the remaining towers collapsed in 1928. From a study of the remains, of old drawings and historical records, and of contemporary buildings, Hersey has been able to make at least preliminary reconstructions of the appearance of the church in its early periods. Some further study and excavation is planned when conditions permit.

Such graphic restoration of lost monuments (as Conant has done for Cluny) adds much to our knowledge of architectural history, which, if it were entirely dependent on extant structures, would be incomplete and at times incorrect.

**The Architect in the Middle Ages.**—To follow the meaning of the terms "architectus" and "architector" from the days of Vitruvius to those of Alberti is the object of a scholarly paper in *Speculum* xvii, 1942, pp. 549–562, by N. PEVSNER, who justly states that his study possesses a wider significance than might be expected from a problem of mere terminology. Only rarely, between Roman times and the Renaissance, did "architectus" mean the architect in our sense, i.e., as opposed to mason and builder. Even during the reign of Augustus the term was probably uncommon, having been taken over from the Greek and retaining a ring of distinction alien to the simple Latin "magister"; later, however, it occurs in legal literature, the Vulgate and the writings of the Church Fathers. Cassiodorus, in many ways an outstanding mediator between Antiquity and the Middle Ages, still uses quite naturally "architectus" in the Roman (and the modern) sense, whereas a century later Isidore of Seville, exactly

as might be expected from his historical position at the very juncture of the Early Christian and Mediaeval periods, arrives at definitions partly mediaeval and partly antique—implying on the one hand the mediaeval identity of mason and architect, and on the other the task of design as distinguished from the practical work of construction. After the seventh century, however, and particularly in the North, “architectus” became less and less usual, being replaced by such terms as “artifex,” “operarius,” or “caementarius.” Einhart knew Vitruvius, the earliest mediaeval text of whose work seems to have been written in Cologne about 850, and in a letter asks his son to obtain explanations of obscure passages from a pupil of Rabanus Maurus. Rabanus appears the last author for a long time to convey an indication that the Roman, Vitruvian sense of “architectus” was still alive. Only with him does Antiquity come to an end, just as is the case with his style of poetry, or with the style of architecture and painting of his age.

Hereafter we are faced by a profoundly mediaeval transformation in the significance of the term “architectus”; i.e., it now denotes a cleric of sufficiently theoretical knowledge to enable him to do his own planning. And yet it would be wrong to consider as a true architect every clerical patron mentioned as the “builder” of a church or monastery, for such verbs as “fecit” or “construxit” and nouns such as “aedificator” or “fabricator” are as a rule used for patrons, regardless of whether or not they were their own planners. The creative personality, in short, did not interest the Middle Ages enough to insist on a terminological distinction between patron and artists. The outcome of this situation is a multitude of confusing passages in mediaeval sources which often elude satisfactory explanation, and thus, even where an author has the word “architectus,” he uses it simply as a synonym of “caementarius” without meaning to suggest special planning interests.

But while this terminological confusion still reigned in the North, Humanism and the Renaissance had recovered for Italy the true significance of “architectus,” and this revival must be understood in connection with the deeper change in the social position and the appreciation of the artist which constitutes an integral part of the Renaissance movement. Although this Renaissance development of the term can easily be followed from the fourteenth century onward, it is difficult to give an adequate account of its earlier history in

Italy. From certain evidence it is tempting to conclude that it meant more than “master-mason” in the Northern sense, and that some of its original significance may have been kept alive to be passed on to the Renaissance—but this conclusion seems scarcely justified. It does seem, however, as though the first in Tuscany to use “architectus” consistently were the Dominicans, among them St. Thomas Aquinas in his first mature work (*Summa contra Gentiles*, 1259–64). There exists, moreover, a striking parallelism between this reinstatement of the term in its original Greek sense and a new attitude toward Antiquity and the architectural profession which is to be found at exactly this same time in French Gothic, e.g., in the prominence given to the names of the architects of Reims and Amiens, in the “classic” style of sculpture at Reims, and in the broader outlook of such men as Villard de Honnecourt. From St. Thomas the use of “architectonicus” as “leading,” “governing,” “conducting” passes into the writings of other scholastics such as John de Janua, himself a Dominican who died about 1298, and it seems quite possible to assume that from him or through some similar channel the Dominicans of Florence received the term and gradually made it known and popular among the scholars and humanists from whom the initiators of the Italian Renaissance then took it over.

It is of considerable significance in this connection that foreign countries began to revive the use of “architector” and “architectus” at exactly the time when they became aware of Italian humanism and the Italian Renaissance. It remained unusual, however, in France during the fifteenth century, and came into favor only when the French kings began calling Italian artists into the country. Thus, when the Renaissance had conquered the North, “architectus” had followed its course, and in the days of the Mansarts in France, and of Jones and Wren in England, it was just as usual a term in the North as it had been up to the fifth century in the South, and as it had become again in Florence during the fifteenth.

**Limoges Gémellion.**—In *Bull. Detroit Inst. Arts* xxii, pp. 25–28 (cover illustration) FRANCIS WARING ROBINSON publishes an enamelled copper basin, recently acquired by the Detroit Institute of Arts. Its interior is decorated in champlevé enamel, with figures and vine motives reserved in the metal against backgrounds of blue-grey and white, touched with dark red and turquoise blue. The central medallion shows a

falconer, mounted, with his bird on his right hand. This is surrounded by six interlocking circles of red enamel, cut off at the bottoms by the central medallion, in which are standing figures of women in dancing poses. These dancing women represent one of the most popular of mediaeval dances, the carole. The character of the design is distinctly Gothic. This basin is of the type called a *gémellion*, and was one of a pair used in washing the hands in religious or secular ceremonies. One of them was provided with a spout for pouring water over the hands, while the other, of which this is an example, was for receiving the poured water. As fingers were freely used in eating, the washing of the hands at meals was of great importance. The writer believes that this basin was probably of Limoges workmanship, and assigns to it a date in the second half of the thirteenth century.

**Statue of St. James in New York.**—JAMES J. RORIMER reports, in *BMMA.*, new series, i, 1942, pp. 126-127 (2 figs.) that the well-known monumental wood figure of St. James the Less (?) previously published in *MMS.* i, 1929, has recently been cleaned, and its original colors, which had been concealed by grey paint in the seventeenth or eighteenth centuries, revealed. It can now be "euphemistically" called Rhenish, and dated between 1260 and 1280. It bears a strong relationship to the sculpture of the cathedrals of Freiburg and Strassburg.

**Illustrations in Utrecht Psalter.**—In *The Art Bulletin* xxv, 1943, pp. 50-58, DORA PANOFKY discusses the question of text upon which the illustrations in the Utrecht Psalter were based. Many of the pictures were clearly inspired by a different translation of the Psalter. She concludes that the artist used both the Gallican version and the *Hebraicum*, depicting whichever translation was most amenable to illustration.

**Nicolas Dipre.**—In *G.B.A.* ser. vi, xxii, 1942, pp. 9-16 (2 figs.) CHARLES STIRLING begins a study of Provençal artists of the fifteenth century, based largely on notarial records and archives. From the paintings preserved, four artists emerge as masters—Enguerrand Quarton and Nicolas Froment, and two anonymous men, the Master of the Annunciation of Aix, and the painter of the *Pietà* formerly at Villeneuve-lès-Avignon. But beyond these, the writer gives a list of names of painters obtained from the notarial sources, eleven in number. Nicolas Dipre, also called Nicolas d'Amiens, the subject of this study, was a native of Paris and is known to have worked in Avignon from 1495 to

1592. Two paintings are ascribed to him in this article. The first, a fragment of an altarpiece showing the meeting of Joachim and Anne, now in the Museum of Carpentras, is attested by archives as commissioned in 1499, and payment received in April 1500. On the basis of this quite authentic attribution, the writer ascribes a *Marriage of the Virgin* in the collection of Count de Demandolx-Dedons at Marseilles, either to Dipre or to his workshop. Several other pictures are listed, which also show strong resemblances.

## RENAISSANCE

**Artists in Civic Life.**—GEORGE R. KERNODLE describes briefly the active part played by artists in civic and political affairs during the Renaissance, in *The Art Bulletin* xxv, 1943, pp. 59-64. On the frequent occasions of triumphal entries or royal visits to important cities, elaborate tableaux were arranged along the streets, many of them miniature theatre sets with live actors. Civic and political leaders soon realized the propaganda possibilities of such tableaux and the scenes displayed were chosen with an eye to their possible influence on visiting royalty or in favor of some civic program instead of another. Historical records show that many well known artists devoted a good part of their time to designing these tableaux.

**Florentine Sculptors of Fifteenth Century.**—In *The Art Bulletin* xxiv, 1942, pp. 326-334, H. W. JANSON discusses two Florentine sculptors of the fifteenth century, Pagno di Lapo and Agostino di Duccio. Pagno has been generally accepted as the sculptor of a marble relief of the Madonna and Child in the Museo dell'Opera del Duomo in Florence. The attribution is dependent on a passage in the second edition of Vasari's *Lives*, in the chapter on Michelozzo. Janson demonstrates that this passage cannot be accepted at its face value. In the first edition Vasari had attributed the sculptural works mentioned to Michelozzo. Before the appearance of the second edition he had undoubtedly discovered the signature of Pagno di Lapo on the inside of the Tabernacle erected by Piero di' Medici, and, since he also fancied himself as a better architect than Michelozzo, he was not averse to taking credit away and attributing the other sculpture to Pagno. Vasari also was "always eager to elaborate upon the achievements of masters whom he believed he had saved from oblivion," and consequently on the basis of a slight resemblance to the Annunziata relief of the Madonna he attributed the Opera Madonna to

Pagno. Thus, "Pagno's carefully fostered reputation as a sculptor appears to be founded on nothing more solid than a comedy of errors brought about by Vasari's own spurious reasoning."

The Opera Madonna, however, is too fine and original to be the work of an unknown sculptor. Janson believes that it is an early work of Agostino di Duccio, under the dominant influence of Luca della Robbia. Agostino's style was also strongly influenced by the work of Michelozzo, as is apparent in the reliefs from the S. Gimignano altar in the Cathedral at Modena and in later reliefs of the Madonna and Child, now in the Louvre and the National Gallery in Washington, and elsewhere.

**Dürer.**—The much disputed question as to whether Dürer was familiar with the statue of Apollo in the Belvedere of the Vatican and used it as a source for the proportion and pose of his drawing of Apollo, now in the British Museum, is plausibly answered by A. M. FRIEND, JR., in *The Art Bulletin* xxv, 1943, pp. 40-49. Friend refutes the arguments of many authors that Dürer was not familiar with the statue, chiefly, as they argued, because the statue had not yet been discovered. However, there is no proof that the statue had not been found, and there are reasons to believe it had been. Friend shows that Dürer must have known drawings from the Codex Escorialensis and probably possessed tracings of some of them. The drawing of the Apollo Belvedere in the Codex is from the same point of view. Also, a recently published drawing by Dürer from the Lubormirski Museum in Lemberg is most certainly based on the Codex sketch of the Borghese-Piccolomini Herakles, a copy of the statue by Lysippus, of which the best known replica is the Farnese in Naples. The slender Apollo and the heavy-set Herakles served as models for Dürer's proportion drawings.

**Dürer's Salvator Mundi.**—This panel, which for several years has been in the Metropolitan Museum, has recently been cleaned, and the nineteenth century restoration removed, revealing it as an unfinished painting. HARRY B. WEHLE considers it a relatively early work, painted before his visit to Italy in 1505. It has been connected with two panels in the Kunsthalle in Bremen, representing Sts. Onuphrius and John the Baptist, also unfinished, making the Salvator Mundi the central panel in a triptych. In these side panels, particularly that of St. Onuphrius, the influence on Dürer of his stay in Venice, and of the

work of Giovanni Bellini, whom he knew and revered, is quite apparent, and the suggestion is made that the side panels were actually painted in Venice (*B.M.A. n.s. i*, 1942, pp. 156-164; 9 figs.).

**Gaspere Negro.**—W. G. CONSTABLE, in *G.B.A. ser. vi*, xxii, 1942, pp. 1-8, reports that the one extant work of this Venetian painter, the Virgin enthroned, with the dead Christ upon her knees, and saints around her, now in the Museum of Fine Arts in Boston, has been cleaned, with very interesting results. The artist signs himself as a Venetian, and gives the date, 1513. Berenson had contemptuously dismissed this painting as "stupid" but "betraying acquaintance with Giorgione and perhaps Titian," but the cleaning reveals that this acquaintance is fictitious, and entirely due to restorations. As a matter of fact, Constable sees rather the influence of the quattrocento in general and Cima da Conegliano in particular. A biographical sketch of the artist, from what few records we possess, is given, suggesting that the painting was made for a church in Udine, where most of his work was done, and perhaps for one dedicated to St. Blaise, who appears in the picture. The last reference to him occurs in 1544. He seems to have had a son, Arsenio Negro, who was also a painter.

**Portrait by Bronzino.**—W. R. VALENTINER, in *Bull. Detroit Inst. Arts* xxii, pp. 2-3 and cover illustration, reports the accession of a portrait by the Florentine Agnolo Bronzino (1503-1572) by the Detroit Institute of Arts. The subject is Eleanora da Toledo, wife of Grand Duke Cosimo I of Tuscany. She was the only child of Don Pedro da Toledo, Marquis of Villafranca, and Viceroy of Naples, and to her Cosimo owed his wealth, and the power to change the republican government of Florence into an absolute monarchy. This portrait, painted about 1555, is a second version of the famous portrait of the same subject in the Uffizi, and was formerly in the collection of the Duke of Hamilton. Like all artists of Florence of his time, Bronzino was much under the influence of Michelangelo, who overshadows all the artistic work of the period.

**Renaissance Architectural Books.**—WILLIAM M. IVINS, JR., in *B.M.A. n.s. i*, 1942, pp. 151-155 (4 figs.) reports the gift to the Metropolitan Museum of the collection of books on this subject made by the late W. Gedney Beatty. Of interest to readers of this JOURNAL will be his very complete set of editions of Vitruvius, beginning with an English fifteenth-century manuscript, and in-

cluding copies of all three editions printed before 1501. Two of the illustrations of this article are from the first illustrated edition. Our readers will also be interested in a fine copy (title-page illustrated) of the first (1540) edition of the third book of Sebastiano Serlio (see *AJA.* xlv, 1942, pp. 562-563).

**Versailles Fountains.**—The Théâtre d'Eau at Versailles, which was completed in 1672, was provided with four fountain groups, modelled in lead. When it was demolished about 1750, these sculptures disappeared, and were only known from drawings. Two of them, however, have been found, and are in the National Gallery of Art in Washington. They are published by CHARLES SEYMOUR, JR., in *G.B.A.* ser. vi, xxii, 1942, pp. 41-52 (12 figs.). One of two *amorini*, playing with a swan, is by Jean-Baptiste Tuby; the other, playing a lyre, by Pierre Legros. They decorated the stage of the theatre. Lyre and swan were considered attributes of Erato, called at this time the Muse of Love, to which the other lost sculptures corresponded. Three other fountains (lost) decorated the ends of three cascaded *allées*, and represented the attributes of Jupiter, Pluto and Mars, in compliment to the power, wealth, and valor of Louis XIV.

### AMERICA

The Annual Meeting of the American Philosophical Society, Held at Philadelphia for Promoting Useful Knowledge, April 23 to 25, 1942, was largely devoted to a symposium of Recent Advances in American Archaeology. Fourteen recognized authorities, in most cases the outstanding expert in his field, presented papers. These have now been published in the *Proceedings* of the Society, lxxxvi, 1943, pp. i-iii, 205-327. They are separately digested below. Their geographical range is from the Arctic to Peru. Though a few are reports, largely factual, of one or several excavations of unusual interest and importance, the great majority synthesize the present state of knowledge and opinion on the various American archaeological areas. Many are well illustrated, and most are accompanied by bibliographical notes or a large final bibliography.

**The Maya Region.**—SYLVANUS GRISWOLD MORLEY, who inaugurated the work and directed much of it, recounts the *Archaeological Investigations of the Carnegie Institution of Washington in the Maya Area of Middle America, during the Past Twenty-Eight Years*. This is a thirty-year report

on the activities of the organization that has been most active in the Maya field. In addition to archaeological explorations and excavations, researches, often in conjunction with other institutions, were made into historical records, economic and social life and language of the modern Maya, their agriculture, epidemiology and anthropometry, as well as a survey of the flora, fauna, geology and geography of the Maya region, so that a fairly complete picture of the Maya civilization and of the environment that produced it is now presented. In the field of archaeology dozens of new sites and hundreds of new inscriptions have been discovered, many sites excavated, some of them rather fully, and several cities partly restored. These researches have centered in Yucatan and Guatemala, but have extended from San Salvador and northern Honduras to the region of Tampico. Seventeen years were spent at Chichen Itza, twelve at Uaxactun (pp. 205-219).

**The Archaeology of the Eskimo.**—HENRY B. COLLINS, JR. writes a well illustrated article, documented by a large bibliography, on the origin of the Eskimo, and, less directly, of the other American Indians. A large part of the article, by a typological comparison between Mesolithic-Neolithic artifacts of the Lake Baikal region of Siberia and the oldest Eskimo objects, proves the main thesis, that the former is the cultural ancestor of the latter. There is a great temporal difference between them, however, the oldest Eskimo cultures of Alaska probably not antedating the Christian Era, while those of Lake Baikal are claimed to go back six thousand years, but are probably not so old. In northeastern Siberia, the archaeology of which is practically unknown, the precursors of the Eskimo probably carried on the Baikal neolithic way of life long after it had been discontinued elsewhere. Tenuous Eskimo roots also go back to Old World palaeolithic, especially in the field of art.

The Eskimo are relatively recent migrants to America, as is demonstrated by the facts that the fauna of the oldest and latest sites are practically identical, and physiographical changes negligible. In this they contrast with the earliest known American cultures, the Folsom and Sandia, which are much older, apparently more ancient than the Baikal neolithic with which they seem to have no direct relation; the Baikal sites also show little faunal differentiation from the present.

The oldest Eskimo cultures were highly developed and more elaborated, especially from an

artistic aspect, than the later ones. But there is a cultural continuity, and some sites have been occupied from earliest to present times. The oldest cultures are the Old Bering Sea and the Ipiutak. Collins does not agree with Rainey that the Ipiutak culture is pre-Eskimo, but it may well represent the oldest Eskimo culture; it is highly specialized but related to and probably contemporary with Old Bering Sea. The Birnirk was one later phase that developed out of the Old Bering Sea Culture, and this in turn gave rise to the Thule Culture of about the year 1000. Probably of approximately the same age as Birnirk are the Dorset, Aleut and Cook Inlet cultures, the origins and relationships of which are obscure. The Punuk culture was a contemporary of the Thule. Out of Thule developed the recent and modern Eskimo cultures, one of which, the Inugsuk, was contemporary with the Norsemen in Greenland (*Eskimo Archaeology and its Bearing on the Problem of Man's Antiquity in America*, pp. 220-235).

**New Discoveries in Oregon.**—In *Results of Recent Archaeological Research in the Northern Great Basin Region of South Central Oregon*, L. S. CRESSMAN gives a résumé of the results of his excavations in caves and old lake beds in the arid region of south central Oregon and northeastern California from 1932 to 1940. The article is documented by a good bibliography and illustrated by thirteen maps, nine of which show the distribution of basketry techniques through the far west. The work divides itself into two parts, that on early man and that on later cultures. Some of the caves are divided by a septum of pumice deposit to which a geologist assigns an age of five to ten thousand years, more likely the latter date. In two caves and one lake-bed site were found evidences of human occupation that may date back ten thousand years, the artifacts associated with remains of horse, camel and proboscideans, and indicating a moister period than the present. The objects show a closer resemblance to the Cochise than to the Folsom and Yuma cultures. It was a hunting and gathering culture.

In the upper deposits in caves further east, matting occurs in the lower layers and twined basketry a little later, appearing suddenly as if the result of an immigration. Spear-throwers are found, later replaced by bows and arrows; a peculiar L-shaped scapula awl has diagnostic value. Coiled basketry also appears. Much discussion is given to basketry techniques. All these traits are traced widely through the far west and

many resemblances found to Basket Maker. Cressman's conclusions are that the Late Oregon cave cultures correspond to early and early middle Lovelock Cave material, antecedent to classical Basket Maker. There are two possibilities, either that the Oregon-Nevada materials are ancestral to early Anasazi, or that both stem from a common ancestral type, probably further north. Another influence from Oregon extended into California (pp. 236-246).

**A Pre-Folsom Horizon.**—*Discoveries in Sandia Cave and Early Horizons in the Southwest* is a well illustrated report on three years of excavation in caves near Bernalillo by the University of New Mexico, written by the excavator, FRANK C. HIBBEN. This work revealed a new and apparently oldest cultural horizon. Cultures older than the classic Folsom and Yuma had been indicated elsewhere but never before stratigraphically proved. In the Sandia cave several successive occupation periods were shown. Uppermost was a deposit of recent Pueblo material in deposits indicating the same arid conditions prevailing at present. Beneath this was a deposit including artifacts of classic Folsom character, points, scrapers and graters, associated with remains of the sloth. This lay on a thin water-deposited sterile layer of yellow ocher. Below this was a thicker layer, about a half meter thick, of loosely consolidated breccia containing charcoal and fire hearths, and projectile points of a new type, known now as Sandia. These crudely chipped points of coarser stone, often a local chert, are very different from the finely flaked Folsom points. The diagnostic characteristic is a notch or side-shoulder on one side, somewhat resembling late Solutrean European types, though no connection is implied. Two sub-types of these points are distinguished, as well as scrapers of several types. The deposit was compressed by dampness but not water-laid. This is the earliest occupation level, with the cave floor beneath. The associated mammal remains are of bison, horse, camel, mammoth and mastodon. The Folsom layer lacked the mastodon, though the absence may be fortuitous, and contained sloth and wolf. All species below the calcium layer are extinct. The sloth remains continued above the stalagmite crust to a later period.

The stratigraphy shows an oscillation of wet and dry periods, which is also suggested at other Folsom sites. There were at least two moist periods during the occupation; these probably tie in with geologically identified glacial and pluvial periods.

The classic Folsom layer probably closely follows the Corral Creek glacial stage.

In the nearby Manzano cave the stratigraphy overlaps the Sandia. This also contains a calcium crust, with Sandia points below it. Above it were found grooved stone balls, obviously bola stones, and points, unlike Sandia but like those found in Gypsum cave. These were associated with sloth and camel remains.

The sequence, from latest to earliest, evidently is:

1. Manzano-Gypsum cave level with distinctive points and bola weights associated with sloth and camel. Early Recent.
2. Wet period; end of Pleistocene.
3. Folsom period with bison, horse, camel and mammoth. Early Recent or Late Pleistocene.
4. Wet period represented by yellow ocher.
5. Pre-Folsom Sandia level with typical Pleistocene fauna including mastodon (pp. 247-254).

**The Earliest Americans.**—In *Folsom and Yuma Problems*, EDGAR B. HOWARD\* outlines the problems concerned with these early evidences of man in America. One of these is that of the time of his arrival. Opinions of qualified specialists vary from 2000 B.C. to 70,000 years ago, but the usual estimate of geologists is 10,000 to 25,000 years. Palaeontologists favor recent dates. Some of the extinct mammals with which Folsom remains are associated apparently survived into comparatively recent times. Several claims for the association of mastodon bones with pottery have been made, but in our Southwest, at least, these animals did not survive so long; no extinct fauna is found even with Basket Maker remains. Some 8,000 years elapsed between the Folsom and the Basket-Maker periods, the latter dating from about the beginning of the Christian Era. Archaeologically, little is known about this intervening period, but the older fauna died out. Glacial conditions in Siberia play a large part in this question. Siberia was apparently not so heavily glaciated as North America and Europe. There the mammoth was either post-glacial or inter-glacial, and disappeared at the end of the palaeolithic stage. Probably man in Siberia had reached the final stages of the Palaeolithic culture before the continental ice sheets had entirely disappeared. Probably corridors leading to Bering Strait were opened shortly

after the ice began to recede. The contention that man could not have entered America before 2500 B.C. is based on an invalid assumption of unity of European and Siberian palaeolithic, and on the practical absence of archaeological data from northeastern Siberia, and cannot be accepted. No skeletal remains of "Folsom Man" have been found; probably he did not practise inhumation. He was probably narrow-headed, and a mixture of several racial elements. No human remains of archaic types comparable to the Neanderthal have ever been found in America. Other problems concern the relationship of Folsom culture to the Yuma, to others that seem to be even older, and to others that are characterized by fluted projectile points. Fluted points seem to be specifically American (pp. 255-259).

**The Earliest Agricultural Cultures in the Southwest.**—The nature of the period that intervened between the older hunting and food-gathering and the agricultural peoples in America has been one of our great problems. The oldest cultures, such as Folsom and Sandia, go back 10,000 to 25,000 years ago, while agriculture and pottery seem to have been introduced, apparently contemporaneously, about the beginning of the Christian era. Much of this gap is closed by the Cochise culture of southern Arizona which occurs in three stages. The oldest, the Sulphur Springs stage, represented a food-gathering people, contemporary with many extinct animals, and, presumably, with the Folsom. Its temporal extent, as determined by Antevs, is from before 10,000 to 8000 B.C. The climate was cooler and wetter. The Chiricahua stage extended from 8000 to 3000 B.C. The climate was more arid, and the fauna that of today. With few exceptions the stone industry was derived from the preceding period. The last or San Pedro stage extended to 500 B.C., leaving only a few centuries to be accounted for before the introduction of agriculture and pottery. On the nearer side the most probable links seem to have been the Hohokam and Mogollon peoples. Similarities in their earliest pottery suggest a common parentage. The stone typology of early Mogollon sites reflects inheritance from the San Pedro horizon, so that the former might well be a development from the latter, plus pottery.

Excavations in the Ventana Cave in southern Arizona by the Arizona State Museum present the link that probably closes the 500-year gap between San Pedro and Hohokam. Three superimposed cultures were found in the five meters of deposit.

\* Died March 18, 1943.

The lowest, 75 cm. thick, indicated a wet cycle with remains of extinct mammals, and flaked implements possibly related to Folsom Culture. The middle layer, 2.5 m. in depth, contained modern fauna and grinding stones that have much in common with the Chiricahua Cochise stage, as well as flaked implements that resemble both these and those of the early cultures of the Pinto and Mohave Basins of California. The San Pedro Cochise type was abundant in the upper part of this layer. In the third or top layer, about 1.5 m. thick, arid conditions were indicated, and pottery was found throughout. Generally speaking, the oldest types of pottery were at the bottom, the latest at the top. Most of it was Hohokam, the oldest being of the Vahki phase. Modern Papago objects were also found. At about the same level as pottery a new type of mano (grinding stone), generally associated with agriculture, appeared, thus indicating the simultaneous introduction of agriculture and pottery. Most of the other grinding tools were of Cochise type. At the point where pottery appeared there was no sterile layer or any evidence of a cultural break, also no change in the material culture except for the pottery and the new type of mano. This indicates that the introduction of agriculture and pottery was not the result of a new migration, but of cultural diffusion. Thus the transition from late pre-agricultural and pre-pottery horizons to Hohokam and Mogollon in southern Arizona seems to be made (EMIL W. HAURY: *A Possible Cochise-Mogollon-Hohokam Sequence*, pp. 260-263).

**Prehistory in the American Southwest.**—In *Reconstruction of Anasazi History*, HAROLD S. COLTON outlines modern opinions of the prehistory of the Basket-Maker and Pueblo peoples to whom the name Anasazi is now applied. They were and are sedentary agricultural peoples who build masonry apartment houses with circular ceremonial underground chambers called kivas, make pottery and weave textiles. At the time of their maximum extension, A.D. 1100-1150, they occupied most of Arizona and New Mexico, and parts of Colorado, Utah and Nevada. From about the beginning of the Christian Era to the present day their development can be traced through many stages. The author shows these in a large chart covering nine "branches," each in a definite area, and containing over forty names of types, or foci, from 300 to 1800 A.D. The oldest date definitely determined by dendrochronological methods is 217, and the temporal relationships of the foci

from then on are known. They are divided into two Basket Maker and five Pueblo periods, each of about two centuries duration.

"Branch" is the term adopted for the archaeological analogue of a modern "tribe." The prehistoric Hopi tribe, for instance, is termed the Tusayan Branch; this can be traced back at least to the year 1300, and less certainly to 500 or 600. It was always in contact with neighboring Anasazi branches and with other unrelated peoples. Some cultural elements were borrowed by one branch from another, but in other cases two neighboring branches followed their individual techniques for centuries without being affected by the different practices of their neighbors. The boundaries between neighboring branches sometimes remained perfectly static for as long as six hundred years; other frontiers varied constantly. A culture would remain relatively static for many centuries, and then suddenly there would be changes in many respects; such dynamic periods are known as crises. These were often brought about by environmental changes. For instance, one such period was about the year 1300, following the great drought of 1275-1299, which caused great changes in population; many sites were abandoned then. Local crises were caused by volcanic eruptions. Certain foci became dominant and had a wide influence. Trade was widespread, parrots being imported from tropical Mexico, shells from the Pacific Coast. The reconstruction of Anasazi history is made possible by three elements, a tree-ring time-scale, and the study of architecture and pottery (pp. 264-269).

**A Remarkable Burial in Arizona.**—In a very detailed and profusely illustrated article (three plates in color), JOHN C. MCGREGOR describes his excavation of a very unusual and "rich" burial in a small masonry house at Ridge Ruin, near Flagstaff, Arizona. This is a site of some twenty or twenty-five rooms of Pueblo III age, the first quarter of the twelfth century. The grave was found in a semi-subterranean chamber that might have been a kiva. Some six hundred objects were found with the body, almost all of very unusual quality and beauty. It was probably the "richest" find ever made in the American Southwest. Several Hopi informants recognized the complex of esoteric objects as pertaining to a ceremony somewhat magical in character, that was last performed some fifty years ago. The objects are suggestive of Hopi ceremonialism and indicate a continued age of some eight hundred

years for this ceremony. The burial was probably that of a magician or priest, a wealthy man. Objects and materials from a large surrounding area indicate a wide extent of trade relations. No highly perishable objects were found. Those recovered include pottery vessels, basketry, matting, turquoise mosaics, ceremonial objects of several types, nose plugs and ear pendants, small stone ornaments, beads, shell ornaments, a cap of beads, bone awls, projectile points, bows and arrows, copper ore, cinnabar, crystals. The twenty-five pottery vessels are of nine types, representing both local and trade wares of Late Pueblo II and Early Pueblo III periods. The baskets are of three types, one of which is new, the surface smoothly covered with an unidentified filler and painted. Other basketry forms are covered with mosaic, as are many of the ceremonial objects and some pendants; this mosaic is of turquoise and red rodent teeth. Some of the ceremonial objects are in the form of human hands and deer hoofs. There was much use of lac. Shells, including abalone and dentalium, came from the Gulf of California or the Pacific Ocean. The cranium was posteriorly deformed, the face long, with a long slender nose (*Burial of an Early American Magician*, pp. 270-298).

**Archaeology of the Mississippi Valley.**—FAY-COOPER COLE gives the up-to-date opinion on cultural sequences in the Middle West. In recent years a number of prehistoric cultures with definite diagnostic criteria have been identified, such as Hopewell, Adena, Fort Ancient and Cahokia. A taxonomic system has been adopted for classifying these and others, with their localized variants, consisting of, in descending order, pattern, phase, aspect, focus and component. Two patterns are recognized today in the Middle West, the Woodland and the Mississippi. Throughout the area an early Woodland culture is found, characterized by small villages, crude heavy pottery, flexed burials covered with mounds, frail round houses, and characteristic stone artifacts. An earlier non-pottery horizon, possibly connected with the shell mounds in the southeast, as well as with the much earlier Folsom horizon, is indicated by certain excavations. Following the early Woodland period and pattern many different cultures and cultural phases developed. Four main regions are distinguished: Central Illinois, Wisconsin and Northern Illinois, Southern Illinois, and St. Louis and Missouri. Each is divided into three main periods and each period contains

several foci, aspects and phases. Indiana conforms closely to central and southern Illinois, Iowa to Wisconsin and northern Illinois. The classical "Moundbuilder" cultures of Ohio are not discussed. The sequences through these three periods in each of the four areas are named, and their main diagnostic criteria given, but are too detailed to be repeated here; their relationships are shown in a chart. Following the Early Woodland, a Red Ochre manifestation is seen in three of the areas; this has some resemblance to the Adena culture and may equate with it in time. Toward the end of the first or Woodland period Hopewell influences became strong in almost all the regions. Following the Early Woodland Pattern come various foci and aspects of the Mississippi pattern. Some of the Upper Mississippi phases may be associated with historic tribes. About the time of White settlements extensive shifts in population seem to have taken place. Recent developments in dendrochronology will soon permit the assignment of definite dates to at least the later stages in the series (*Chronology in the Middle West*, pp. 299-303).

**The Prehistory of our Southeastern States.**—In *Late Horizons in the Southeast*, T. M. N. LEWIS sketches the complicated archaeology of the Southeast. This has much in common with the Northeast and the Middle West, but with regional differences that require their own taxonomy. The Archaic, Woodland, Mississippi and Hopewell complexes are found. People of diverse cultures inhabited the area simultaneously; with the exception of the pre-pottery Archaic period, all the other manifestations were present in late horizons. There was much succession and displacement of cultures, and acculturation. The late cultures fall into two groups: the highly sedentary and the semi-sedentary peoples, the former having more complex cultures. These correspond to the Mississippi and Woodland patterns, respectively. The Woodland pattern probably had a northern provenience, while the earlier simpler manifestations of Mississippi are probably found in the earlier levels in the South. In at least three areas early groups made pottery. The relations of the dozens of foci and aspects are discussed but are too detailed to be digested here. In almost every area the latest horizons are generally attributed to the historic Muskogean peoples. Certain sites and foci are ascribed to the Apalaches, others to the Hitchiti, Yamasee, Creek, Choctaw, Natchez, Chickasaw, Yuchi,

Shawnee and Cherokee. There is a very definite association of certain pottery types with certain modern tribes. The archaeological evidence indicates that the northern Iroquois-speaking tribes emigrated from the South rather than vice versa; the northerly migration was probably due to Muskogean pressure. The archaeology of certain North Carolina sites has also been identified with the eastern Sioux (Catawba), which has a definite bearing on the theory of the eastern origin of the Sioux. Also the Chitimacha of Louisiana might be a survival of Hopewellian culture. A bibliography and a number of illustrations accompany the article (pp. 304-311).

**Archaeological Horizons in the Northeastern United States.**—In a brief meaty digest WILLIAM A. RITCHIE recounts the results of recent excavations that have added to the picture of the prehistoric Northeast. The existence of a primary archaic level, underlying many subsequent ones, was proved some fifteen years ago at Lamoka in south central New York and has recently been verified also for the central and western parts of the State. This relatively primitive economic stage is characterized by positive and negative diagnostic traits, a list of which is given. The presence of a cognate racial type and culture has recently been proved over a large portion of the Southeast and even in the Mississippi Valley. Later researches may show an affiliation between the Eastern Archaic and the Basket-Maker phase of the Southwest.

Recent excavations in New York have revealed a phase subsequent to the Lamoka, known as the Laurentian Aspect of the Archaic Pattern. This culture, characterized by diagnostic traits which are listed, has now been traced throughout much of the Northeast and is probably related to the "Red Paint" culture of Maine. It is also characterized by an unexpected brachycephalic factor. This culture amalgamated with and finally submerged the Lamoka. It was pre-sedentary and probably Palaeo-Algonkin. There is some resemblance to Eskimo, and the problem of Laurentian—Eskimo cultural interrelations is an important one. A good bibliography completes the résumé (*Recent Advances in New York State and the Northeast*, pp. 313-314).

**Archaeology of New Jersey.**—The Abbott farm at Trenton has been a puzzle to archaeologists for seventy years. DOROTHY CROSS gives the final answer which is both a relief and a disappointment to archaeologists. Dr. Abbott reported there three

separate and successive cultures: palaeoliths of glacial or pre-glacial age in the lower gravels, an Argillite culture in the intervening yellow sand, and a recent Delaware culture in the humus. The latter two were substantiated by two later investigators, and Spier's investigations indicated that the artifacts had been redeposited by either water or wind action. The middle Argillite culture seemed to lack pottery.

The work of the New Jersey Archaeological Survey with the help of the WPA in 1936-1941 excavated carefully 700,000 cubic feet of dirt and recovered 95,000 artifacts and potsherds. The earlier theories are entirely disproved; the lower gravel contains no artifacts and those in the humus and yellow sand are relatively homogeneous and follow a normal frequency curve. Pottery and argillite objects are found throughout. There is no earlier Argillite culture; the objects are all relatively recent and probably Delaware. The occurrence of pits, hearths, caches and pottery vessels *in situ* disproves the redeposition theory. All types of materials were found at all depths. The occurrence of relatively recent objects at a depth of five feet may be explained by the assumption of an originally hummocky surface that was later leveled. At the foot of the bluff the artifacts were found in three layers of humus with sterile layers between, but showing no differentiation in contents. The earliest occupants of the Abbott farm site had pottery. The culture would fall in the Coastal Aspect of the Northeastern Phase of the Woodland Pattern, mainly the Early Focus but with some Late Focus traits. In New Jersey these two foci have been renamed the "Red Valley" (Early) and the Rosencrans (Late); most of the Abbott material is Red Valley. A long list of objects found and of diagnostic traits is given. A few objects of Laurentian Aspect and of Owasco aspect were found. A few trade objects were unearthed, such as a Susquehannock pottery vessel and an Iroquois pipe. "The above would seem to indicate that related cultures of the Eastern area are not very old, and that those identified with certain of the early aspects are separated from each other by little or no difference in time" (*The Effect of the Abbott Farm on Eastern Chronology*, pp. 315-319).

**The Aztecs.**—The name Aztec should be used as a generic term for the tribes that shared such religious practices, social organization, and arts and crafts as were current in central Mexico from 1300 to 1520. A number of different city groups are

included in this term; the Texcocans and Culhuas established Aztec civilization more than a century before the Tenochcas, the Aztecs of Mexico City, achieved an important place in the Valley of Mexico. Aztec civilization may be reconstructed through three media, the archival material, the archaeological remains, and "the analysis of the influence and support of this culture in terms of the history of Middle American civilization." No other American culture has all three to such a degree. The historical sources form an imposing body. The emphasis of Middle American civilization was on religion, highly organized and ritualized.

Five culture stages comprise the archaeological history of Middle America. On the first two, the original hunting and gathering groups, and the earliest sedentary agriculturists, we have no data. The earliest known peoples are of the Middle or Archaic Cultures, with permanent villages and a relative cultural uniformity. The fourth era saw the rise of a highly ritualized community religion, involving the building of temples, a pantheon, a calendar, and a beginning at writing. Nevertheless, in speech, politics, art, architecture and intellectual background the individual communities differed greatly. The cultures of Teotihuacan, of the Mayas, the Olmecs and the Zapotecs had a long period of contemporaneity which cannot yet be accurately stated in terms of years. Finally the different religions were replaced by a common theology. At this time the Aztec civilization became predominant in the Valley of Mexico. Two groups of people, one rude savages, the other civilized dynasts, overwhelmed the earlier Teotihuacan culture. The population apparently increased rapidly to its agricultural maximum, and migration, expansion and conquests naturally followed. An essentially agricultural attitude was replaced by a militaristic one. There are evidences of Aztec contact, or at least of influence, in Sonora and Sinaloa in northwestern Mexico, in the mounds of Georgia, Alabama and Oklahoma, in the region of Tampico, and in Oaxaca. Migrant groups reached Yucatan, Nicaragua and Honduras.

Throughout America the tenth to twelfth centuries seems to have been a period of upheaval and wandering. In our southwestern states extensive migrations apparently occurred among the Pueblo and Hohokam peoples. In the southeastern states burial mounds seem to have been replaced by ceremonial platforms and Mexican cult practices.

The Aztec civilizations arose about this time, and it may have been then that the Peten Maya cities were abandoned. A similar upheaval took place in Peru when the Inca culture superposed itself on a number of independent peoples, both in the highlands and on the coast; whether this occurred at the same time as the Aztec ascent is uncertain. There may have been similar transformation periods in the yet earlier history of American cultures. The Aztec period was thus a very important one (GEORGE C. VAILLANT, — *The Aztecs: Their Cultural and Historical Position in Middle American Archaeology*, pp. 320-322).

**The Archaeological Picture in Peru.** — Until recently cultural sequences in the Andean region were found to fit into a framework of two widespread epochs, the earlier Tiahuanaco and the later Inca, with intervening minor and localized cultures so that the sequence ran: Early local; Tiahuanaco middle; Late Local; Inca. The northern highland cultures of Peru, the Chavin and the Recuay, were slightly known. Modern researches have indicated that these cultures do not fit into the picture and deserve an independent position. Chavin in particular had a wide distribution over most of Peru and its position in Peruvian archaeology is still under discussion. The center of the culture seems to have been at the ruin of Chavin de Huantar, on a tributary of the Marañon River on the east side of the Andes. The ruins are extensive with distinctive architecture, art style in sculpture, and ceramics. The architectural plan is symmetrical, with platform mounds and courts; the buildings have interior galleries, small rooms and ventilation shafts, and several floors connected by stairways and ramps. The walls are faced with dressed stone blocks laid in horizontal courses, with rubble interior fill. Some buildings are decorated with carved stone heads on tenons. The art style is very distinctive and is the best diagnostic criterion of Chavin culture and influence; it is based almost exclusively on the feline concept, stylized and generally curvilinear. The ceramics, mainly monochrome, are also very characteristic, with simple geometric decoration. The chronological position is yet unsolved, and the relations between Chavin and Recuay are unknown, but evidence indicates that Chavin is pre-Tiahuanaco and may be of considerable antiquity. The Chavin style is found at a number of places on the coast of Peru as well as in the highlands. Potsherds of Chavin wares occur in the shell heaps at Ancon which seem to be the oldest deposits at that

site. At Puerto de Supe the Chavin ceramics seem to be old. Chavin architectural and sculptural traits, with local variations, were found at Nepeña, where there is some suggestion that Chavin is older than the Early Chimú, heretofore the oldest known culture in that region. Recently a number of graves of a new style known as Cupisnique have been discovered in the Chicama Valley, the center of the Early Chimú culture; though having local characteristics the associated objects plainly show Chavin elements. No foreign wares are found in these graves, and the stratigraphy indicates that they are older than Early Chimú. In one complex of graves another period is indicated between the Cupisnique (Chavin) and the Early Chimú. Other isolated Chavin finds have been made in widely separated places in Peru, both on the coast and in the highlands. In spite of its ornateness, the Chavin material seems to be of considerable antiquity, being generally the earliest culture wherever found. As a style, and probably also as a period, it is found throughout a large part of Peru, both coast and highland, with several local variations. All these evidences indicate that Chavin must be considered as a third pan-Peruvian period. A good bibliography documents the article (WENDELL C. BENNETT. — *The Position of Chavin in Andean Sequences*, pp. 323-326).

**Two Maya Bowls.** — LINTON SATTERTHWAITE, JR., publishes, in *Bull. Univ. Mus.* ix, no. 4, 1942, pp. 10-12, pls. II, III, two fragmentary bowls, discovered at Piedras Negras, Guatemala, by the University Museum's expeditions of 1932 and 1935. Enough of the sherds exist to enable a reconstruction, and a restoration of the designs. They represent monkeys, running or kneeling, derived from either the American howler or spider monkey. It is believed that they had a religious or mythological significance. The bowls are painted in black and two shades of orange, and belong in the late period of Piedras Negras pottery.

#### FAR EAST

**The Japanese.** — *Smithsonian Inst. War Background Studies* 7, 1943, is devoted to a scholarly study of our enemies, the Japanese, by JOHN F. EMBREE (42 pp. 16 pls. 3 figs.). The purpose of the study is to give a short outline of the "origins and present social structure of the Japanese nation." The readers of this JOURNAL will be primarily interested in the discussion of the origins (pp. 1-10) rather than the present social structure, except in so far as it represents a sur-

vival of the beginnings of the people. The Japanese have an elaborate mythological history of their origin, which to many of them is a fundamental article of faith. Briefly stated, they believe that their race stems from a wedded pair of deities called Izanagi and Izanami; that the islands of Japan were formed from drops that fell from the heavenly spear of Izanagi, after it had been dipped into the deep, and that the Japanese people are descended from their offspring. (A painting in the Museum of Fine Arts in Boston, illustrated on pl. 1, shows Izanagi creating the islands, while Izanami looks on). The transition between myth and history is bridged by the advent of Jimmu Tenno, as the first historical ruler of Japan. Orthodox Japanese history sets his birth at 660 B.C., but a date of about 1 A.D. is more probable. The first history of Japan, called the Kojiki, was compiled in 712 A.D., and another, the Nihongi, in 720. It is from these histories that the mythological data are obtained, and the theory of the divine origin of the Imperial family is asserted, and to this day devoutly believed. The scientific anthropological researches into the origin of modern Japan prove that although basically of Mongoloid stock, the racial origins of the Japanese people are very much mixed. Thus in the hairy Ainu peoples, we have an early Caucasoid stock from eastern Asia, the more Mongoloid peoples came probably in the first instance from Korea, and in addition there is a pronounced Malayan strain from the South, and in some areas in the southern islands a small but definite Negrito strain. So far, archaeological discoveries have revealed no evidence of a Palaeolithic culture — the earliest finds (illustrated on pl. 2 and fig. 2) are Neolithic and suggest the merging of cultures from northeastern Asia (Ainu-Tungusic) and southern Asia (Malayan).

The earliest culture, as described in the histories mentioned above, was agricultural in the main, with hunting and fishing, and was confined to the coasts, and the courses of the larger streams. Although writing had come to Japan in the fifth century, the population was mostly preliterate. Iron was used for swords and knives, but many implements were of stone. Navigation was but little developed. The houses of the period show Malaysian influence. A full discussion is given of the religious and social customs of the period, many of which still survive to this day, and likewise show Malaysian influence.

Skipping the history of Japan from the eighth

century, the writer devotes considerable attention to the long period (1615-1868) of the Tokugawa Shogunate—a period of internal peace and cultural consolidation. While the Emperor still reigned as nominal head of the state, actual power was centered in the Tokugawa feudal lords. At the time that Commodore Perry arrived in Japanese waters, there had arisen a movement of discontent with the Tokugawa, and a desire for contact with the outside world. "The Tokugawa were unable to refuse an invitation to deal with foreigners.—This capitulation so weakened their position at home that they were soon overthrown." The result of this was the beginning of the Meiji era (1868) under which the Emperor began to rule as well as reign, and which is the era of today, with Western culture the prevailing note.

The rest of the essay is devoted to a discussion of modern Japan, beginning with a chapter on her national social structure, subdivided into sections on group rule, political and economic framework, and recent trends. Then comes a chapter devoted to the family and household, respect for age, and position of women. The next chapter takes up the cycle of life, birth and infancy, education, marriage, and death. The chapter on religion follows, with short but good sections on Buddhism (introduced from China in the sixth century) and Shinto, with its various classes and sects. In Shinto we have the survival of the earliest religions of Japan. The seasons and holidays are discussed in connection with religion, while the chapter concludes with a demonstration of religion as a form of social control. In the final chapter it is shown that the reigning dynasty of Japan is by far the oldest in the world; that in spite of their mixed origins, the Japanese have attained a remarkable cultural unity and political strength, and that while borrowing from the material cultures of other races and peoples, they have steadily maintained their own ideological concepts. Finally, popular misconceptions regarding the Japanese are listed, together with their misconceptions of Western peoples, and particularly the Americans. An Appendix of facts and figures, and a short but well selected bibliography, conclude the study.

**Two Heads in Cleveland.**—HOWARD HOLLIS publishes two heads recently acquired by the Cleveland Museum of Art. One is a head of the period of the Gupta Dynasty in India (320-600 A.D.) representing a Bodhisattva, found in the neighborhood of Mathura; the other is Javanese,

is of a Buddha, and is dated in the hundred years from the middle of the eighth century A.D. to the middle of the ninth, and comes from Borobudur (*Bull. Cleveland Mus.* xxx, 1943, pp. 26-28; pl.).

**Cambodian Bronze Hoard.**—In *Art in America* xxxi, 1943, pp. 78-83 (6 figs.), SHERMAN E. LEE describes a hoard of seven bronze images of the period of Jayavarman VII (1182-1201 A.D.). At this time Cambodian religion experienced an official change, and Buddhism absorbed the Indian Viṣṇu and Śiva cults. Of these images, four are Buddhist, two are Vaiṣṇavite, and one is undetermined. All are now in American collections. They were discovered in 1919, near Saigon in French Indo-China, and were formerly in the Lebel collection in Paris. In 1930 they were put on the market and dispersed. Their approximate date is established by their strong resemblance to some of the sculptures at Ankor. Of the six whose present location is known (one is in America in an unascertained private collection), one is in the Freer Gallery in Washington, one in the Museum of Fine Arts in Boston, one in the Cleveland Museum of Art, one in the Philadelphia Museum of Art, one in the Detroit Institute of Arts, and one in the Nelson Gallery in Kansas City.

**Chinese Bronze Ritual Vessel.**—The City Art Museum of St. Louis has acquired an outstanding example of a very early Chinese ritual bronze vase. The manner of their use is not exactly known, but it is believed that they held sacrifices of food and wine to ensure a successful harvest. Bronzes of this type have all been found in tombs, but they were probably not made primarily for funeral purposes. On this example there are eleven principal designs employed in its ornamentation, which are described at some length. This vase has been previously published by several scholars and has been dated in the Shang Dynasty (1776-1122 B.C.) but it is probably somewhat later, and a date of approximately 1100 B.C. (Late Shang or Early Western Chou) is more conservative and probable (*Bull. City Art Mus.* xxvi, 1941, pp. 42-45 and cover illustration).

**Horses of T'ai T'ang Tsung.**—The authenticity of these famous reliefs, two of which are in the University Museum in Philadelphia, as early T'ang sculptures of 636 or 637 A.D., has been frequently questioned by Dr. John C. Ferguson, who now believes them to be copies made in 973. In an extremely able article in *Bull. Univ. Mus.* ix, no. 4, 1942, pp. 18-28, HELEN E. FERNALD completely vindicates their authenticity, as the original re-

liefs, with most convincing and cogent arguments and proofs. The reliefs in Philadelphia were first published by the late C. W. BISHOP in *MJ.* ix, 1918, pp. 244-272 (19 figs.).

**Two Chinese Equestrian Figures.**—THOMAS T. HOOPES publishes two equestrian figures of the T'ang Dynasty (618-906 A.D.) recently acquired by the City Art Museum of St. Louis, one in unglazed clay, one in bronze. The horse in the clay figure is represented performing a "jambette" with the right fore leg extended, the full weight on the hind legs. The rider is a woman, who sits in a heavy saddle without stirrups. If there were reins and a bridle, they have disappeared, but there are indications which point to their former existence. The rider, saddle, and saddle-blanket form a unit that can be removed from the horse. It is believed that this figure was made in Shensi Province, dates at the end of the seventh or early in the eighth century, and formed part of the funeral equipment of an important personage. The bronze figure is that of a galloping rider. The horse is cast partly hollow, with an opening in the under side of the belly, while the rider is cast solid, and was originally gilded. The suggestion is made that the artist was trying to depict a horse jumping an obstacle, rather than galloping. The saddle of the rider is in this case provided with stirrups. He is not Chinese, but one of the "Northern Barbarians" often depicted in T'ang sculpture (*Bull. City Art Mus.* xxvi, 1941, pp. 66-70; 2 figs. and cover illustration).

**Ming Scroll.**—The Detroit Institute of Arts has acquired a very important scroll by Kuo Hsü of the Ming Dynasty, consisting of two paintings, one a landscape, the other a drawing of a fisherman, illustrating a poem by the artist, which is transcribed on the scroll, and a translation of which is given. Only four works by this painter are known, and this is the only one outside China. Kuo Hsü was born in 1456, and must have died after 1526, for one of his paintings can be dated in that year. This scroll is believed to date about 1500 (SHERMAN E. LEE, in *Bull. Detroit Inst. Arts* xxii, pp. 25-32; 4 figs.).

**Chinese Miniature Paintings.**—The Metropolitan Museum has recently acquired an album of eight miniature paintings by the well-known artist, Chang Tsung-Ts'ang (1686-1755), a famous painter of his day, painted for the Emperor Ch'ien Lung. These are published by ALAN PRIEST in *BMMA.*, n.s., i, 1942, pp. 123-125 (8 figs. and separate pl. in color). They represent landscapes,

and show the influence of the work of painters of the Sung Dynasty, but are painted with the sense of richness and quiet enjoyment characteristic of the period in which the artist lived. Some account is given of what is known of the artist.

**Japanese Painting.**—In *The Art Bulletin*, xxiv, 1942, pp. 351-379, ALEXANDER C. SOPER discusses the rise of Yamoto-e, that is Japanese painting in its purest form. The problems of cultural independence and borrowing find a peculiarly rich illustration in the history of Japan. Viewed in the light of that interest, the whole course of Japanese development becomes a series of great waves of foreign influence. The crest of each wave is a period of intense enthusiasm for alien forms, in which all the amazing skill and energy of the people seem absorbed in a passionate effort of assimilation. The trough beyond every crest is a period of reaction, equally determined in its concentration on native habits and preferences, and in its indifference to the outside world. In this article the author deals with the transition period between the first great period of Chinese (T'ang) influence in the eighth century and the reactionary Japanese culture of the Heian period in the eleventh and twelfth centuries.

**Daiitoku Myō-ō.**—The Fogg Museum has recently acquired an important Japanese print, probably of the sixteenth century, representing a divinity, surmounted by a flaming nimbus, mounted on a buffalo, riding through the sea. He has many heads and limbs, and is identified as belonging to the Tantric or Shingon sect of Buddhism. This sect, originating in India, was brought to Japan from China in the ninth century, and became one of the most popular of Buddhist denominations. Its supreme deity is the Dhyani Buddha, Dainichi, with whom are associated the *Go Dai Myō-ō*, or Five Great Myō-ō, or Manifestations. The principal of these is Fudō, who has shrines all over Japan; next in importance comes Daiitoku Myō-ō, the divinity here represented, who is always shown as mounted on a bull or buffalo, and who always has six heads, six arms and six legs. One of his principal functions is to suppress storms, and it is this function which is here depicted. In their conception of these divinities, the Japanese follow closely the prototypes of India and Tibet, but introduce variations which make them conform more nearly to Japanese life, as for instance, their attribute of averting perils by sea—a very real threat in an island empire. This print has many of the qualities of a painting, and is

colored by hand, but it is a true print, as an examination of its reverse will prove. A date in the sixteenth, or, at latest, early seventeenth century is assigned. Three columns of explanatory notes, including a discussion and analysis of the pigments employed, some of which are most unusual, end the article (BLANCHE W. MAGURN, in *Bull. Fogg Mus.* x, pp. 14-23; 5 figs.).

#### U.S.S.R.

**Phanagoria.**—HENRY FIELD and EUGENE PROSTOV, in *G.B.A.* ser. vi, xxiii, 1943, pp. 129-134 (6 figs.) describe excavations at this site in the Crimea, conducted by the Soviet Government from 1936 to 1940. The settlement was founded by Ionian Greeks about 540 B.C., and in the end of the second century B.C. fell under the sway of Mithridates VI, the famous enemy of Rome. Revolting from him, she won her independence in 64 B.C. Evidence shows that the city survived as late as the twelfth century of our era. Excavations were previously conducted at the end of the eighteenth century, when a number of tombs containing polychrome vases were found, as well as many inscriptions. The recent investigations have also opened nearly one hundred burials, most of them of the first to fourth centuries A.D. In 1936-37 the northwestern part of the site was excavated, revealing ten cultural strata in a depth of 4.75 m., dating from the sixth to the first centuries B.C. As a result of the excavations it can be proven that Phanagoria was one of the largest settlements in the northern Black Sea area. Illustrations show some of the objects found. Most notable is a sherd of an Attic red-figured krater of the late fifth century, showing a nude silen, holding a tray of pomegranates, standing facing right, between a standing and a seated woman. Much work remains to be done before the site is cleared, and all available information obtained.

**Tadzhik S.S.R.**—Near Khovaling an expedition from the Tadzhik Branch of the U.S.S.R. Academy of Sciences excavated the ancient city of Mung, where Samanid pottery and colored glassware were found.

Valuable data were provided by the excavation of Lavakand, the ruins of which were discovered in the salt marshes of Vakhsh Valley. The town covered an area of nearly 600 acres. Here two buildings were unearthed which constitute something entirely new in the history of Central Asian architecture. The first, in the center of the town, consists of two parallel halls 70 meters long. The entrance was covered by an arch. The other, which is on the outskirts, consists of a portico, a central hall and an annex, which had four arched halls. In design the second building belongs to the basilica type. Parts of the walls, more than two meters in height, are still standing. Thus the excavations are important for the history of the architecture not only of Tadzhikistan and Iran, but also of Greece and Rome.

At Shomon (Shomond), not far from the district center of Takhata, were brought to light fragments of vessels not more than two millimeters in thickness, which attest the high ceramic skill of the Tadzhiks. Here also was found a hand grain mill of the kind used in Egypt in the second and third millennia B.C. It now appears that Shomon arose in the first millennium before our era and was destroyed by the Arabs at the end of the eighth century. Excavations are still in progress (*Moscow News*, September 23, 1942).

**Turkoman A.S.S.R.**—An expedition from the Turkestan Branch of the U.S.S.R. Academy of Sciences has conducted excavations at Tash Rabad in the Maryiski Raion on the left bank of the Murghab River. The town has been tentatively identified as Dendanekan, where in the year 1040 Turkomans inflicted a decisive defeat on the Ghaznevid Sultan Masud. To judge by the ruins, the city originated before the coming of Islam to Central Asia. Located upon the busy commercial route between Serakhs and Old Merv, Dendanekan was known for its textiles and pottery. The last mention of the city as a large center belongs to the eleventh century. Close to the site rises a mosque containing twenty-two brick columns faced with alabaster (*Izvestiia*, February 12, 1942).

## BOOK REVIEWS

**KOUROI: A STUDY OF THE DEVELOPMENT OF THE GREEK KOUROS FROM THE LATE SEVENTH TO THE EARLY FIFTH CENTURY B.C.**, by *Gisela M. A. Richter*, with the co-operation of *Irma A. Richter* and with 261 photographs by *Gerard M. Young*. Pp. xxi + 428, including 483 figs. on 135 plates. Oxford University Press, New York, 1942. \$15.00.

In order to read rightly—or even in certain portions to read at all—this masterly contribution on the archaic Greek male statue, it is essential to understand its method and its purpose. Fortunately these are clearly announced and tenaciously pursued. The method is that of comparative anatomy; the purpose is a chronological classification of the “*Apollos*” of the sixth century B.C., on the assumption of a uniform trend toward realism. “During this long period” (i.e. the sixth century with fifteen years added to either end, or 615–485 B.C.) the author discovers that “we shall find a consecutive, systematic development along naturalistic lines, not only in general structure, but in the rendering of each and every part, down to such details as the *tragus* and *antitragus* of the ear, and the alignment of the toes.” To which, in face of the abundant evidence, the reviewer is only too willing to agree. But when the author adds: “Nowhere else can this development be observed so clearly,” the reviewer respectfully wonders whether she has really looked elsewhere with the same attentiveness and patience, since he strongly suspects that the same key which has unlocked the archaic *kouros* will unlock most of the other mysteries in the history of Greek sculpture.

In contrast to the uniform and consistent advance in anatomic correctness, which Miss Richter studies with pitiless devotion, geographical distinctions of provenance, such as should produce local differences of style and isolable school traditions, play almost no part in this book. We infer that, largely as the result of her own industry, the author has only recently discovered how great was the supremacy of systematic anatomical evolution over all other considerations, such as individual style and regional manner, so that there is almost the conviction of revelation in her announcement that “the picture presented by our *kouroi* of a uniform and universal

progression toward naturalism” discouraged any disintegration into “*Parian*, *Naxian*, *Chian*, *Spartan*, *Sikyonian* schools.” This is a most salutary and significant reaction against a procedure which has been followed only too freely in sculptural study, but there will be some who will feel that a new conviction of the validity of the evolutionary method of morphological analysis has led to a slurring of the very deep differences which even from photographs can be seen to exist between East Greek, Cycladic, and various mainland products in these early times. Thus, *Dermys* and *Kittylos* remain locally inept and achieve nothing by being grouped with the *Sunium* boys; the little *Samos* bronzes remain a realm apart, no matter how they are split and grouped chronologically; and in the late sixth-century series of *kouroi* the personal differences threaten to outweigh the morphological uniformities. It is easy to see, however, that the work would only have lost by concessions to any other criteria of analysis and arrangement. By clinging at all cost to anatomical indications, the author has made her point with astonishing emphasis and conviction.

And yet it is precisely in this brilliant coherence of anatomical sequences that the sceptic may think to detect a fatal logical flaw. Since independent external dates hardly exist for these statues, and regional differences of manner are not admitted as material evidence, is it any wonder if, after all the material has been assembled, sorted and graded according to its realistic attainments, the resultant series displays a coherent process of evolution along naturalistic lines? Is it not possible that the *kouroi* display such a marvellous anatomic sequence of forms, not because they were really produced in this temporal succession by ancient sculptors, but because they have been so ordered by the modern investigator? If Miss Richter's treatise can weather this suspicion, its fame and its future are certain.

To say that “the Greek effort was concerted, each generation building on the attainment of the preceding one, and never losing an inch of the ground gained,” is perhaps merely to restate an unfounded assumption, since the degree of anatomic attainment is precisely the basis of the hypothetical chronological arrangement. Nor is the issue met by claiming that it is possible “to

watch the large, flat, almond-shaped eyes which occupy the whole width of the face gradually diminish and assume volume and individual life; to watch the formal, big, flat spirals of hair contract into shapely locks; to see the sharply cut, flat lips assume modelled shapes; to observe how the geometric patterns of the ear become gradually naturalistic," since once again it was precisely this relative state of eyes, hair, lips, and ear which determined the order in which they are taken up and presented to the reader. To add that "in the earliest kouroi the antitragus is never represented; somewhat later it is tentatively, incorrectly rendered; by the third quarter of the sixth century it appears in correct form and is then never omitted" would be more reassuring if one could be sure that the kouroi are not being dated precisely by the condition of their antitragus. Perhaps the solution lies in the discovery that "the progression in anatomical knowledge was amazingly uniform. The different parts developed together. A statue with a primitive and stylized skull and ear and eye will be found to have also a primitive and stylized chest and back and knee. A statue with a more naturalistic skull and ear will also have a more naturalistic back and knee. . . . In no instance do we find really late features in a really early scheme (in spite of the fact that a completely naturalistic model was continuously present in every human being)."

The escape from the dilemma therefore seems to depend on the inner self-consistency of the anatomical rendering. Whether the criterion be Miss Richter's favorite tragus and antitragus, or any other item from her formidable tabulation of "anatomical analyses" with which she covers six good quarto pages of her book, the outcome is presumably always the same. A sequence constructed on any one anatomical count will be virtually the same as that constructed on any other. The master-sequence, constructed out of the congruence of all the anatomical criteria superimposed, must consequently reflect a chronological evolution since there is no other conceivable explanation for the phenomenon. The issue is so fundamental for all history of art, that we can only recommend the most careful scrutiny of this treatise to see whether the basic proposition is sound. If it is, then once again Greek archaeology can claim to have been a laboratory and proving-ground for the ages.

The rather notably few externally secure dates which can be tied in with the kouroi invariably

support, nowhere contradict, the chronology derived from the anatomical sequences. All the absolute chronology in this realm is, however, so precarious that its results are no more than secondary aids to argument. Miss Richter has utilized every hint, but she has been everywhere reserved and cautious in her conclusions and has profited by consulting such excellent specialized authorities—Raubitschek in epigraphy, E. S. G. Robinson in numismatics, Dinsmoor in architecture, Beazley, Ashmole, Tod, to name only a few—that she cannot be taxed with misuse or overuse of the complementary archaeological and historical evidence. But by that very virtue of restraint, she is all the more dependent on her anatomical analyses.

This is the reason why, since everything ultimately hangs on the detail of anatomic observation, a goodly portion of the book has to read rather like Gray's *Botany* translated to the sculptural kingdom. Each and every kouros (and there are 156 of them) is scrutinized for its anatomic condition and the results are recorded in a sort of notebook style, such as most students employ for their own instruction and future reference, but normally do not pass along to a wider public. Undoubtedly, the excuse is the need for brevity; and admittedly, the painstaking compilation of these "museum notes" may have contributed more than any other factor to Miss Richter's unrivalled knowledge of the archaic kouros, but there is very great doubt whether any one else by reading these notes can ever hope to attain a remotely comparable state of intellectual grace. Still, it is difficult to see what else could have been done with all this repetitious documentation, since it forms the actual evidence to prove the cardinal thesis. And *Kouroi* is instantly saved from an otherwise imminent danger of being a very dull specialist's treatise by the clarity and vigor of its introductory chapters and by its really brilliant set of accompanying illustrations (notably those by Gerard Young).

Such prolonged concentration on a single period is likely to beget comparative indifference toward other phases. Miss Richter has not pondered eighth-century art with the same thoroughness as her kouroi, else she would not have selected four statuettes so disparate and so unrelated as the rather rude Metropolitan figurine, the highly stylized Mantiklos dedication from Boeotia, the hammered bronze from Dreros in Crete, and the self-assured "Daedalic" from

Delphi, to illustrate the prehistory of the monumental stone kouros type. And at the other end of her survey, at 485 B.C., with delightfully oblivious concentration on the narrow strait of archaism, Miss Richter finds that "during this period the Greek sculptor attained full knowledge of the structure of the human figure" and "was in possession of a full repertory of anatomical forms," whereas it might not be too wide of the mark to suggest that by 485 B.C. the Greek sculptor had only just begun to take anatomy seriously and set himself to explore the sculptural potentialities of the human form.

Another inevitable by-product of intellectual interest and prolonged concentration on a chosen topic is the special brand of esthetic approval which it engenders. It is a matter of considerable note (and not for any reviewer to criticize or oppose) that Miss Richter is convinced that "the end of the seventh century . . . produced some of the masterpieces of European sculpture," that the recently discovered kouros on Santorin are "stupendous," and that the very first of the kouros (the group which includes the ugly limestone head from the Ptoan Sanctuary, the uncouth Dermys and Kittylos, and the bold but primitively proportioned faces of the Dipylon head, the Sunium boy, and the Metropolitan kouros) share the "radiant clarity" of Sappho's verses on moonlight. Confronted with such wholehearted admiration the present reviewer feels himself a spiritual outcast in admitting that for him the famous Metropolitan kouros is one of the ugliest of statues and can only hope that somehow in his innocence he resembles the little children in Hans Andersen's story of the emperor's clothes.

But all this is, in Aristotle's phrase, merely *epiphainomenon* *ti*, without critical bearing on this scientifically self-engrossed treatise with its wonderful illustrations, fine typography, minute care for text and all imaginable indices, which impart to it the delight of professional perfection.

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THE COMPOSITION OF ANCIENT GREEK BRONZE  
by Earle Radcliffe Caley. Pp. viii+203, pls. I-IV. *Memoirs of the American Philosophical Society*, Philadelphia, 1939.

The growth of archaeology as a science has led to an increasing borrowing from the resources of sister sciences and the progressive exploring of the borderlands between ancient history and modern

technology, a particularly fruitful example of which is this study of ancient bronze coins by a Professor of Chemistry at Princeton. The metallurgy of antiquities has received a great deal of attention in this century,<sup>1</sup> but, in spite of their abundance, the coins have been generally neglected. In 1931 Professor Smith contributed a valuable metallographic note to a paper by Professor Shear,<sup>2</sup> and it may have been this essay that convinced Professor Caley of the desirability of a more general study of the field. In his first chapter he reviews the work of his predecessors whose results he incorporates wherever possible, but the gleanings are slight and the chief advantage of the inclusion is that it gives the volume a completeness which makes it unnecessary for anyone to search the past.

The central doctrine is that early Greek bronzes have a high proportion of tin and a proportion of lead so small that it must be regarded as an unintentional impurity, but that the content of tin steadily falls while that of lead steadily rises. For this there are three main reasons: the first technological, the second and third economic. First: tin-rich bronze is good for casting because of its low melting point, as the bronze-casters had discovered long before the introduction of coinage in that metal; it was therefore this bronze which was used in the beginning for coins. But tin-rich bronze is brittle and hard and therefore unsuitable for striking, as was soon found by experience. The search for a more appropriate alloy led to the use of lead, which to a maximum of 5 or 10% makes an ideal striking metal for a time when striking was by hand and hard dies were costly. Second: this optimum proportion of lead was soon exceeded, and one reason for this was undoubtedly the greater value of tin which made official or surreptitious increase of the lead content a measure of economy. Third: irrespective of its value, tin was in many cases unobtainable. The great spread of the practice of using old coins for the metal of new throughout Greece and the extreme reduction of tin in Sicilian coins in the mid-second century B.C. is a consequence of the Punic wars and the ruin of Carthaginian commerce, while the substitution of copper and brass at Rome in the first century B.C. is attributable to the entire

<sup>1</sup> See the bibliography appended to C. G. Fink and E. P. Polushkin, "Microscopic Study of Ancient Bronze and Copper," *Metals Technology*, Feb. 1936, T. P. 693.

<sup>2</sup> *AJA.* xxxv, 2, pp. 141-146.

collapse of the Cornish tin industry at that time. The very high proportion of lead (up to 30%) in the second and third centuries A.D. testifies to the continued scarcity of tin, but is also apparently a consequence of the habit of melting down old coins with the addition of free lead for the sake of getting an increased number of pieces from the old bullion—a process in perfect conformity with the general inflationary practice of the period.<sup>2</sup>

These conclusions are based on series of coins from Macedon, Athens, Sicyon, Corinth, Syracuse, Antioch, Egypt and Rome, with additional pieces from Greece proper, Sicily and Asia Minor. The author has described and identified the coins analyzed with a care which is most commendable, for the validity of his results of course rests on the certainty of his material. Abnormal specimens occur, and some local variation, but in general the metallic change appears to be a function of time, not of place of minting. In the course of the investigation some very serviceable numismatic suggestions are made; for example, the evidence presented, pp. 36–39, that a certain class of Athenian bronzes are restruck on coins of Antigonos Gonatas, or the confirmation, pp. 64–67, of Miss Edwards' theory that the little bronzes of Corinth with Pegasos and a trident, which Head in *HN*<sup>2</sup> dates 350–243, actually stretch from 400 to 146. No extravagant claims are made for dating by analysis. Indeed, it is more than once expressly stated that the method is only supplementary to normal numismatic definition, yet the candid numismatist will acknowledge that this kind of evidence has an objectivity too often lacking in discussions of dates, and will welcome the possibility that some controversies may be settled by such independent witness.

The statistical method is well adapted to the material, full enough to be convincing, but not excessive. Particularly useful is the calculation of ratios between the percentage of copper, lead and tin, for often the variation of minor elements will make an obvious variation in the percentages of the major ones which, when reduced to ratio, prove not to have changed relation at all. The minor impurities, iron, nickel, cobalt, zinc, gold, arsenic, and sulphur, have a chapter to themselves, where the possibility is raised of eventual

identification of the sources of the various major components by means of these impurities. For example, the association of gold with Cornish cassiterite points to Cornwall as the origin of the tin in the coins. But too little is known as yet of the peculiarities of ancient ores to justify positive identifications.

Both the reason and the manner of the mixture of metals are discussed with fortifying tables and graphs, and a truly astonishing amount of sound deduction is produced from what is really a rather limited body of material. The method of manufacture is also investigated and the plates illustrate the unmodified dendritic structure of cast coins, the modified structure of coins struck on cast flans and the almost entire absence of dendrites in coins struck on worked flans. In this case the conclusion is misleading. "As far as the present results show, the striking of bronze coins on cast blanks was a technique peculiar to Corinth." But the only late coins examined were from Corinth. The Mesopotamian coins of the third century A.D. were certainly struck on cast blanks, for the excess of lead has separated out as free metal in the middle of them, and these plugs of lead are nearer one edge than the other because the blanks were cast on edge and the lead sank in the cooling metal.

The best books are not by any means always the definitive ones, and it is only proof of the quality of this fundamental work that it at once suggests necessary supplements. In the first place, we must have more analyses. In most cases a single specimen represents each issue dealt with. Ancient metallurgy was altogether too rough and ready to make it possible that successive melts used for a single issue would be identical, and we should not need the variations recorded on table XVIII between two Antiochene coins of Philip Jr. to remind us that some differences must occur within an emission. But how great will they be? Until we know that we can never be sure whether differences between two emissions are statistically significant. Of course, the only way to find out is to analyze a number of specimens of the same known date and place. The kings of Macedon will not do, for their mint cities are not certain; Athens, Sicyon and Corinth will not do for the dates of their issues are uncertain. As the author himself points out, the coinage of Syrian Antioch is particularly satisfactory. To be sure, there is nothing earlier than the third century B.C., but thereafter there is an abundant series ac-

<sup>2</sup> The late Professor Campbell of Columbia was of the opinion that the traces of sulphur present in late coins was evidence of the discovery in antiquity of the principle that the addition of sulphur increased the solubility of lead in copper.

curately dated and lasting for centuries. By exploring it we could make perfectly sure what was the development at a single mint. Next we must have comparative material from other cities. With the Seleucid coins of Antioch should be compared those of Seleucia on the Tigris, Tyre and Asia Minor; with the Roman issues of Antioch, those of Mesopotamia, the Pontus and Greece. So we should see exactly the relation of different mints at the same time. Professor Caley is quite as well aware of these *desiderata* as I, but he is unduly pessimistic about the chance of getting the coins for analysis. Recent excavations have produced thousands of coins, most of them in wretched condition, whose only value is exhausted when they are duly recorded. These would be perfect subjects for analysis. Dozens of such coins from Dura are specifically selected and marked for such a fate. The problem at the moment is to find a chemist with the time to devote to them.

The evidence of impurities ought not to be abandoned. For one thing, chemical analysis should be supplemented by spectroscopic. Spectroscopy is an unsatisfactory quantitative guide because the composition of the coins is not uniform and there is no assurance that the sparking point will be typical, but it is a much easier way to detect the presence of the rare elements which may well prove to be the distinguishing marks between ores. For another thing, we need to assemble all that is now recorded about the individualities of known ores in the Mediterranean and adjacent regions. And we need an extension of Davies' work on the Roman mines of Europe to include the Near East.

These are large demands, but Professor Caley has shown us what important results would come from filling them: on the one hand, the perfecting of a scientific technique to be used toward the location and dating of the coins themselves; on the other, an understanding of the whole process of bronze coinage in antiquity from the origin of the bullion to the retirement of the worn-out specie.

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STUDIES IN HONOR OF FREDERICK W. SHIPLEY by *His Colleagues*. Washington University Studies. New Series, Language and Literature No. 14. Pp. vii-xi+314. St. Louis, 1942.

This volume is dedicated to Professor Shipley on the completion of "his fortieth year of dis-

tinguished contribution to the advancement of the institution," as Mr. Throop, the Chancellor of Washington University, says in his appreciative introduction to the volume. The fifteen "Studies" which follow range in subject matter from "Prehistoric Macedonia" to "Immediacy: Its Nature and Value," and are distinguished contributions in their own fields by Prof. Shipley's colleagues. The three which more directly concern archaeology are: E. Taverner's "The Use of Fire in Greek and Roman Love Magic"; G. E. Mylonas' "Prehistoric Macedonia"; and Otto Brendel's "Classical Ariels." Mr. Mylonas is eminently qualified to write on prehistoric Macedonia, as he has spent several seasons in excavating prehistoric sites in various parts of Macedonia and has travelled over the region and studied the material from other sites. He prefaces his discussion with the warning statement that although the number of Neolithic sites explored is imposing, the definite scientific data which were obtained are not sufficient to establish final conclusions for the Neolithic period in Macedonia. In this he differs from W. A. Heurtley, who has tried to formulate conclusions in his latest book, *Prehistoric Macedonia*. Mylonas accepts Heurtley's view that the people who settled the neolithic villages of Servia in western Macedonia were colonists from Thessaly and that the early neolithic remains in this region are almost identical with those found in Thessaly, but concludes that nothing definite can be stated about central and eastern Macedonia beyond the fact that some parts were inhabited during the earlier periods of the Neolithic age. Remains of the second part of the Neolithic period are more numerous, and include foundations of buildings, pottery, figurines, celts and other smaller objects and tools, but there is still not enough material, in Mylonas' opinion, to make it possible to reach definite conclusions on the architecture or the type of graves or burial customs. The pottery is abundant, and Mylonas gives an excellent summary of the different types and lists the sites where they have been found. In conclusion, he makes the provisional statement that western, central and eastern Macedonia and the Chalcidice were inhabited during the second part of the Neolithic period. The culture, to judge from the pottery, appears to represent two distinct aspects, one exemplified by the remains of Servia; the other by those of the Chalcidice and of central and eastern Macedonia. Chronologically, the first part of the

Neolithic period of Macedonia may be assumed to be contemporary with that of Thessaly and the second part with the Neolithic II in Thessaly (ca. 2700-2300 B.C.). The existence of a Chalcolithic period is established by the remains of settlements at Hagias Mamas, Kritsana, Servia and Vorodina. In date these may be equated with the Second Settlement at Troy, dating ca. 2400-2300 B.C.

In "Classical 'Ariels'," Brendel takes us into the realm of late Roman art and discusses the representation of various types of figures which transport the bodies of the deified emperors on their journeys to the other world. These have developed from the older scenes in Greek art where birds or winged sphinxes or even chariots provided the means of ascension for human beings and obviously represent personifications. They appear to express a different idea in each case and Brendel identifies the figure in the Apotheosis of Sabina on the relief in the Conservatori as a *Consecratio*. The Genius on the base of the Column of Antoninus may well represent *Ascensus*, according to the author, while the Genius who carries off Ganymede in the reliefs in the subterranean basilica in Rome, Brendel feels certain must be Boreas, who as a Hyperborean "transports the elected souls to the blessed land in the North, or even high up in the sky." The so-called Persian, who carries Augustus on his back in the centre of the scene on the *Grand Camée de France*, is identified as *Polus*, who is substituted for *Caelum* as representing the abode of the deified Augustus in the northern sky and his costume is that of a northerner, not a Persian. The globe in his hand stresses his celestial nature. Brendel suggests that this "idea of the deified ruler, living on the northern pole of heaven" appears to have originated not in Rome, but in Pharaonic Egypt, and that in fact the cameo may have been modelled on some work of Alexandrian art.

ELIZABETH PIERCE BLEGEN

"THE USE OF FIRE IN GREEK AND ROMAN LOVE MAGIC," pp. 17-37.

Professor Tavenner's article on fire as a potent element in love-magic is a most interesting discussion of literary rendering of such procedures in Theocritus' great mime (his second idyll), in Virgil's eighth eclogue and in Horace's eighth satire of the first book of Satires. To this the author adds illuminating material from love-spells found in papyri of the fourth and fifth centuries

after Christ, which, though separated by many centuries from the poem of Theocritus, still reveal the continuing folk-beliefs of the people of Alexandria, a city in which Theocritus spent part of his creative life under the patronage of Ptolemy II. The astonishing persistence of superstitions is well illustrated by the parallels which Professor Tavenner finds in the magic papyri for Simaetha's performances, especially in the use of fire-magic. For that matter, the witches in *Macbeth* use a cauldron, as did Medea and Simaetha, and in the horrid ingredients of their "charmèd pot" there is a lizard's leg, just as for the deadly brew which Simaetha designed for the morrow in case her lover should not return, a lizard was brayed. And fire plays its part in the rites of the witches in *Macbeth* "for their charm of powerful trouble."

"Double, double, toil and trouble

Fire burn and water bubble."

As Professor Tavenner says, among the unlettered and the superstitious, such beliefs and practices change but little from century to century.

In the spells, ἀγῶγαι, which the author cites, the spell is defined as ἔμπυρος performed "in fire." This word in earlier centuries is one of religious, not magic, significance. It is used by the tragedians and others of the burnt sacrifices and of the art of divination by fire. In Euripides, *Phoenissae* 954, the phrase ἔμπύρῳ τέχνῃ occurs. This divination is perilously close to witchcraft and the adoption of the word ἔμπυρος by spell-mongers is another confirmation of Halliday's remark (*Greek Divination*, p. 20) that "the religion of one age becomes the magic of another."

The methods of the Egyptian magic, the vegetable and other substances employed, the deities and personages, Greek and Hebrew, invoked, the magic and unintelligible words and letters, and the use of fire, are described by Tavenner. He contrasts the grossness of the desire expressed in these spells with the poignant beauty of Simaetha's despairing passion.

After discussing the Egyptian love-charms, Tavenner turns to the scenes in Virgil and Horace, noting the variations in magic procedure and the elaborations in each author. In both, he says, "the melting image and the melting heart are equated," and fire-magic is in evidence in both.

Tavenner is in doubt as to what Virgil had in mind when he has the operator bid the maid take the altar ashes and throw them over her

head into a flowing stream without looking back; he suggests that the poet is thinking of some bit of genuine Italian folk-lore. Such folk-lore may well have existed in Italy, but I believe that Virgil is here imitating Leucothea's injunction about her magic veil (*Od.* v, 349 f.), in which she tells Odysseus to loose it from him after he is saved and throw it into the sea far from the shore, turning himself away from the sight. This passage and Theocritus xxiv, 93-95 (which Tavenner cites) account for the lines in Virgil, who knew so well both the *Odyssey* and Theocritus.

All these practices and ideas are of an immense antiquity in the primitive and subconscious life of mankind, now and again rising from the baser level to the higher, clothed with beauty by the genius of artist and poet. The folk-memory is tenacious and Agamède (*Il.* xi, 740), with her knowledge of all herbs that spring from earth, Circe with her wand and her maleficent potions, Medea with her cauldron and her salves, Deianira with her love-potion, and other heroines are varied types of dealers in magic, forerunners of the tragic girl whose drama Theocritus distilled from such base elements as are described in the magic papyri.

Tavenner notes the mingling of beliefs and customs, inevitable in Alexandria with its melting-pot of Greek, Jewish and Egyptian races. His article is of absorbing interest and not only develops the thesis of the importance of fire as a magic element, but adds to our understanding of the baser magic and the magic of the poet who charms us (cf. κληθεμός, of the effect of Odysseus' tales. *Od.* xi, 334; xiii, 2) by his mime of Simaetha and her faithless lover. On one point I venture to differ from Professor Tavenner. The "Unhappy Ending" is better for poetry and doubtless for Simaetha. Better that her charms should not succeed!

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GOLD AND SILVER COIN STANDARDS IN THE ROMAN EMPIRE, by Louis C. West. Pp. 199. *Numismatic Notes and Monographs*, No. 94, New York, 1941.

"The purpose of this paper is to determine the official ratio of gold and silver from an examination of the weights of all imperial gold and silver coins." The execution of this purpose, announced in the introduction, is in the form of 41 tables, with exhaustive commentary. The first 5 tables, summarizing the whole work, are, 1) the ratio of

gold and silver (Augustus to Diocletian), 2) the weight of the aureus (Augustus to Carinus), 3) the weight of the gold quinarius (Augustus to Commodus), 4) the weight of silver coins—denarius, antoninianus, Syrian drachma, Caesarean drachma (Augustus to Diocletian), 5) the fineness of silver coins—the same categories plus "Alexandria" (Augustus to Diocletian). The basis of calculation is the ascertained weight of some 9,000 coins, and the prime reason for taking the question back to the pieces of money themselves is the diverse conclusions to which different authorities have come from the literary sources, a diversity clearly shown in the note on page 3. But it must not be thought that the author has neglected the work of his predecessors. The bibliography on pp. 27-30 is merely a list of the publications from which weights have been taken, but the notes throughout show with what diligence he has searched for theory as well as fact.

Everyone knows that the weight of the aureus sank and that the silver was debased, but authorities have been by no means unanimous as to the stages of the decline and the reasons to be assigned to successive changes. The tables by individual emperors give the basic data; as to explanations the book is more productive of caveats and refutations than of original suggestions. This may be depressing to those who prefer answers to problems, but it is highly serviceable to all those who realize that unless an explanation fits the facts it is worse than useless. Unfortunately, there are facts which no explanation seems to fit. For example: the gold standard of Augustus was an aureus of about 121 grains, that is, 41 to the pound. This had a tendency to decrease slightly, but in 64 A.D. Nero introduced a new standard of 112 grains, 45 to the pound. Domitian raised the weight to 118 grains, and Nerva followed him, but Trajan returned to an aureus of 111 grains. These changes and the reasons assigned for them are discussed at length, and the upshot of it is that the reasons are unknown. Of course, the gradual decline of a standard in any metal is familiar to numismatists, but the large reductions of Nero and Trajan and, still more, the increase under Domitian must have been the result of a definite plan. It would be very interesting if we could recover the plan, but the bare fact is that we cannot. Again, Trajan called in and melted down the old heavier imperial denarii. This would be easy to explain if he had also called in the heavy denarii of Domitian and Nerva. But

he did not. Table Q, giving the composition of silver hoards from Augustus to Severus Alexander, makes perfectly clear what happened, but we are as far as ever from knowing the reason. To say that the book is full of unsolved problems is only to say that West is a scientist, who will not let his imagination outrun his data.

Nevertheless, the general picture is reasonably clear until the third century, when the confusion of imperial finance is too great to be reduced to any simple pattern. An extreme illustration of the difficulties is to be found on pp. 151-165, where the coinage of Valerian and Gallienus is discussed. Table AJ exhibits the appalling dispersion of weights of the gold coins when they are divided by years and mints.<sup>4</sup> From this dispersion West draws "with some probability of correctness" the conclusion that aurei were coined 70 to the pound in 253/4, 90 to the pound in 255-263, 80 to the pound in 264-268. This he prefers to the hypothesis that there was no standard. It is a delicate question whether there was any practical advantage in a standard involving trientes, double trientes, aurei and  $1\frac{1}{3}$  aureus pieces, indistinguishable except by weight, the weights of which form so unbroken a series that a man with one gold coin could not possibly tell what denomination he was supposed to have. It is, as the author says, a tremendous handicap to small transactions if single pieces have to be weighed, yet I do not see how the necessity could be avoided by the mere existence of a standard which was not adhered to. J. G. Milne once argued<sup>5</sup> that under certain circumstances "two coins of different weights may pass as of the same purchasing power," but that certainly has not been a doctrine popular with numismatists. A big new hoard of Gallienus' gold might set things right; in the meantime, West has done all that is possible—and perhaps a little more.

The hypothesis of equal purchasing power of

<sup>4</sup> The aurei of Gallienus alone are not so divided. The division is not impossible. Webb (Mattingly and Sydenham, *RIC*. v, Part 1) gives weights for 7 coins of Milan, and though his work is very unsatisfactory in the matter of dating, help is to be had from Voetter (*NZ*. 1908—which Webb did not use) and Alföldi (*Berytus* 1938). Arranging Gallienus' coins is a weary business and this suggestion is offered not as a criticism of West, but as a notice that the task is not hopeless. It would have very little effect on the present work.

<sup>5</sup> "The Melos Hoard of 1907," *NNM*. 62, 1934, p. 13.

coins unequal as bullion cannot be altogether dismissed. There is, for example, the difference in standard of the gold of Galba from the mints of Rome and Spain, and a similar difference under Elagabalus between Rome and Antioch. There is the lighter weight of Hadrian's drachma from Amisus than his denarius, and the regular inferiority of the drachma of Caesarea to that of Syria.<sup>6</sup> The reason may have been the relative availability of bullion. The result with the silver was to restrict it to its own district, but it is hard to believe that the gold of Rome, which was lighter, would not circulate in the provinces.

The melancholy history of the adulteration of the silver currency is set forth in Table E, but before that history is completed we need a great many more analyses than are now available.

An adequate discussion of all that the volume contains would result in another book, for which the reviewer has neither inclination nor capacity. These random comments may suggest how much material there is, but special mention must be made of two features which might not have been expected: the figures on the contemporary Persian coinage and the gathering together under the appropriate emperors of all the literary and epigraphical mention of coins. Altogether, the work is deserving of the highest praise and it is a great satisfaction to know that the author, in collaboration with his colleague, A. C. Johnson, is now engaged on a study of Alexandrian coinage.

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DIE MÜNZPRÄGUNG DER OSTKELTEN UND IHRER NACHBAREN, by Karl Pink. *Dissertationes Pannonicae*, Series II, Fasc. 15, Pp. 159, pls. XXX, map. Budapest, 1939.

The tetradrachms of Philip III circulated widely to the north of Macedonia, where they achieved a popularity among the barbarians never equalled by those of Alexander. They thus became the model for the silver issues of the Eastern Celts as Philip's gold did for the gold issues of the Western Celts. The relative chronology of these barbarous imitations is to be determined by their

<sup>6</sup> Of the two exceptions (Table D) the first, for Claudius, is based on calculations of Homo which may not be accurate. But the second, Marcus, is even greater than represented, for the coins attributed to Commodus belong in Marcus' reign, and a second tetradrachm of Marcus found at Dura weighs only 186 grains. I do not understand the number 11 given for Commodus in the table. Only three coins are cited in the text.

decline in weight and fineness and the gradual degeneration of their types and inscriptions. This observation is obvious and not beyond the competence of any numismatist. The great contribution of Dr. Pink is in grouping the varieties according to locality. This demanded a patience and thoroughness which few would care to devote to such unlovely material. His list includes 398 individual finds, and his argument is much assisted by an admirable map on which these finds are located wherever possible. His plates illustrate some 600 pieces, not only the imitations of Philip II, but of the subsidiary types, such as Alexander III, Philip III, Lysimachus, Amphipolis and Roman Macedonia. The book will be heartily welcome to collections with a few specimens of "barbarous imitations," floating uncertainly about the trays, with neither date nor place assignable. Not many American scholars will be in a position to profit by the real importance of the work, which is fundamental for any serious study of the East Celts. So far as absolute chronology goes, Pink has good grounds for his conclusion that the issues extend roughly from 150 to 50 B.C. As he says, the way is now open for the closer dating of single issues, which future excavations may well achieve.

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THE IRISH STONE AGE, by Hallam L. Movius, Jr.  
Pp. XXIV + 339, figs. 59, pls. 7. Cambridge  
University Press, Cambridge, England, 1942.  
\$7.50.

Hallam Movius has provided the archeologist with a comprehensive account of the prehistory of Ireland from its first occupation in about 6800 B.C. down to early Christian times. The work

consists of two parts: a first, which deals with the general chronological problem, and a second, which treats particularly of research on the north-east Irish coast, undertaken by the author during five seasons of field work for the Harvard Irish Survey.

The study of the chronology is patterned on the work of J. G. D. Clark, who determined the time periods for the Mesolithic cultures of northeastern Europe by a striking coördination of relevant data from such special fields as climatology, geochronology, and paleobotany. Movius establishes on less certain evidence a sequence correlated with that of Clark. Had fuller data been available, perhaps more of the recapitulation and evaluation of extensive source material could have been diverted to appendices, with consequent gain in the evenness and directness of presentation, which qualities distinguish the work of his predecessor.

From the interpretation of the excavations we learn that toward the end of the Pleistocene, Stone Age men moved from England into Ireland and Scotland (at that time connected by a land bridge) where they developed a Mesolithic culture, described as Larnian. This culture is known from an Early and a Late Phase. By the time of the Late Phase, Scotland had become separated geographically and distinguished by its own Obanian culture. Even after the arrival of Neolithic cultures in the Megalithic and Campignian traditions about 2000 B.C., the early indigenous Irish culture still survived until Christian times in the less hospitable parts of the country. Although the story is not complete, the outlines are clear and Movius deserves a scholar's credit for work that has been long, arduous and honest.

CORNELIUS OSGOOD